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# DMX Power Pack

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02.9654.0010

23 January 1998



# Service Manual

**VARI\*LITE®**  
The Automated Lighting Company

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# DMX Power Pack

## Service Manual

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**Revision History**

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# Foreword

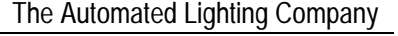
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<b>Boldface</b>	Trademarked or registered product.	Example: <b>Artisan</b> ® control console
<i>Italics</i>	Words with specialized meanings such as luminaire attributes.	Example: Luminaire <i>intensity</i>
<b>Bold Italics</b>	Highlighting trademarked products within titles.	Example: <b>Artisan Control Console</b>
Ariel Font	Macintosh computer screen commands.	Example: Click on SAVE.
ALL CAPS	Board Control menu option.	Example: Select RESET.
[brackets]	Console button name.	Example: Press [STRT] button.
#-pos.	Indicates the number of position or pins in a connector.	Example: 4-pos MTA connector

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**RE: Comments to DMX Power Pack Service Manual (02.9654.0010)**

**DATE:**

***Copy or tear this page from manual, complete, and fax  
(or mail) to Product Support Department***

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# Chapter 1. Introduction

This chapter contains the following sections:

- 1.1 General Information
- 1.2 Equipment Description
- 1.3 Principles of Operation

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# 1.1 General Information

## 1.1.1 About This Manual

This manual describes specific information regarding description and installation of the DMX power pack and related equipment. It provides test, fault isolation, and repair procedures for the purpose of general service and repair of the DMX power pack. The manual is intended for use by Vari-Lite personnel and by Vari-Lite’s customers/clients. The following equipment items are covered in this manual:

<u>Equipment Description</u>	<u>Part Number</u>
DMX Power Pack, <b>C3</b> Dimmer	20.9654.0001
DMX Power Pack, <b>APS6</b> Module	20.9654.0002

## 1.1.2 Documentation

### 1.1.2.1 Technical Manuals

Procedures for operating and maintaining a**Series 200™** or **Series 300** system are contained in**Series 200** System Manual (02.3004.0200) and various equipment manuals. Programming procedures are contained in the Operator Programming Manuals, which are kept with the console. There are currently two programming manuals: 02.3004.0010 (**Artisan®** and **mini-Artisan®** control consoles) and 02.3004.0210 (**Artisan Plus®**, **mini-Artisan Plus®**, and **mini-Artisan2®** consoles).

All of the ACS equipment are contained in the ACS Equipment Service Manual (02.9623.0200). Each luminaire and console has its own service manual. Both types of **Artisan** consoles are covered in the **Artisan** Control Console Service Manual (02.9622.00101). The three **mini-Artisan** consoles are contained in separate service manuals.

Procedures for inspecting and preparing equipment for shipment are found in the **Series 200** System Equipment Preparation and Inspection Procedures (02.3004.0042).

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### 1.1.2.2 Technical Bulletins

Technical bulletins are issued from the Dallas, Texas USA office. They are updates to documentation that discuss changes to the equipment, software, and the latest available information concerning **VARI\*LITE®** equipment. Technical bulletins are categorized by assembly or subassembly, and identified by a number such as ART-075 (**Artisan** Technical Bulletin number 75).

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### 1.1.3 Maintenance Philosophy

The fault isolation and maintenance sections of this manual provide a logical path of fault isolation and repair designed to return the equipment to proper operation in most cases. The fault isolation procedures for the equipment end item have been broken into two sections, which lead the technician to maintenance procedures that he/she can reasonably be expected to perform.

The criteria for separating fault isolation and maintenance procedures into two sections can be defined by Class 2 and Class 3 repairs. Class 2 repairs only require the technician to replace an end item subassembly or easily accessible component (e.g., a fuse) in order to return the equipment to proper operation. Class 2 repairs are applicable to situations in which tools and/or experience of the technician are limited, or time does not permit extensive maintenance. Class 3 repairs (identified as *Shop Only*) involve in-depth repair to subassemblies that have been identified as faulty. Class 3 repairs are applicable to situations in which tools and experience of the technician allow for more extensive procedures. In some cases, even though a technician may have the ability and resources to perform extensive repair, he/she may decide to replace the entire subassembly in order to return the equipment to proper operation more quickly. The subassembly could then be repaired at a more appropriate time.

It is extremely important to note that while many of the commonly identified solutions to equipment failure are provided in this manual, it does not cover all possible situations. Contact the appropriate Vari-Lite Support Group if you have questions or if the procedures given do not solve the problem.

### 1.1.4 Safety

All components of the **Series 200** and **Series 300** systems use high voltage to operate. These voltages can produce death on contact. When working around or within powered components and cables, extreme caution must be used. When conditions permit, maintenance should be performed with power off.

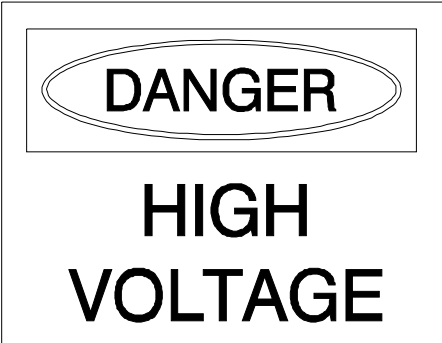
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**WARNING:** The modular rack is a power distribution system and requires extra caution when installing and servicing!

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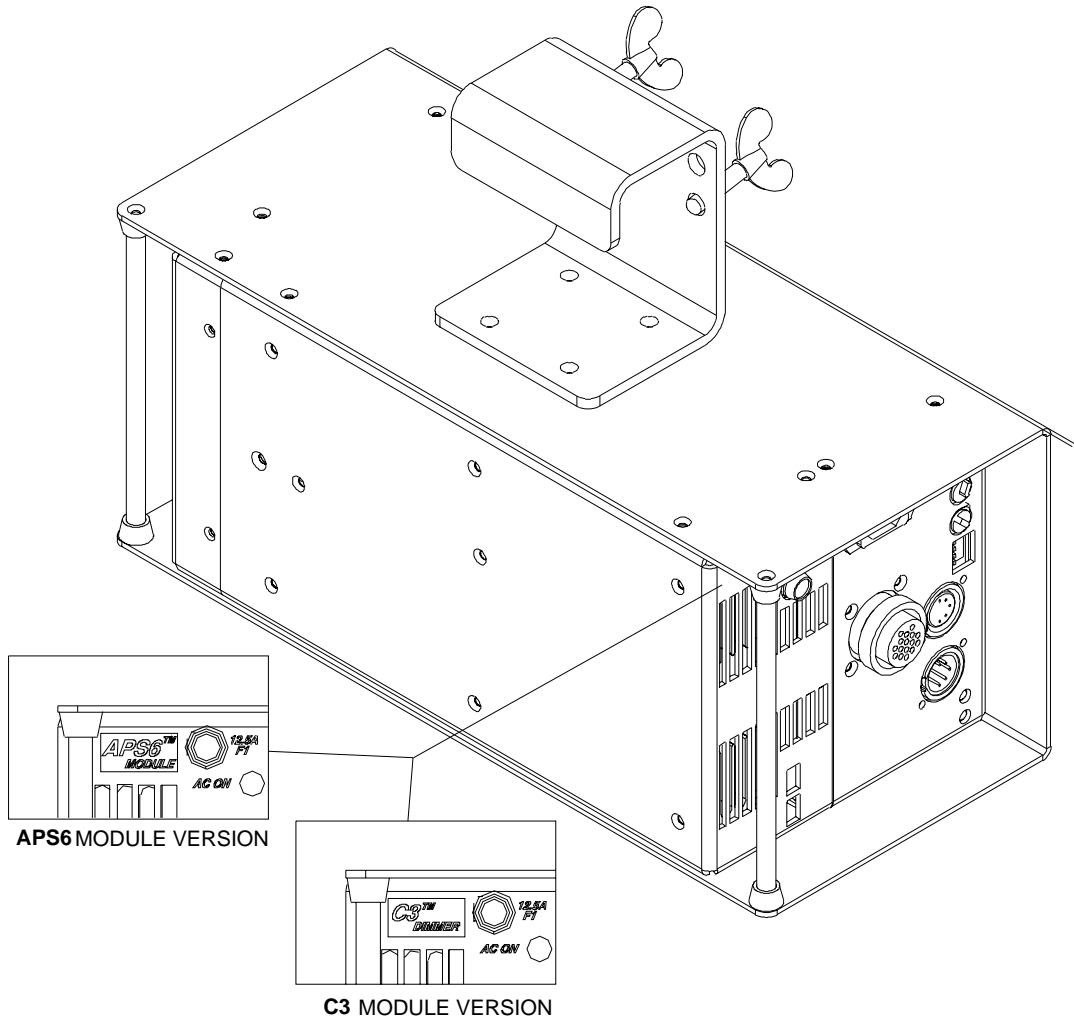


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# 1.2 Equipment Description

## 1.2.1 DMX Power Pack



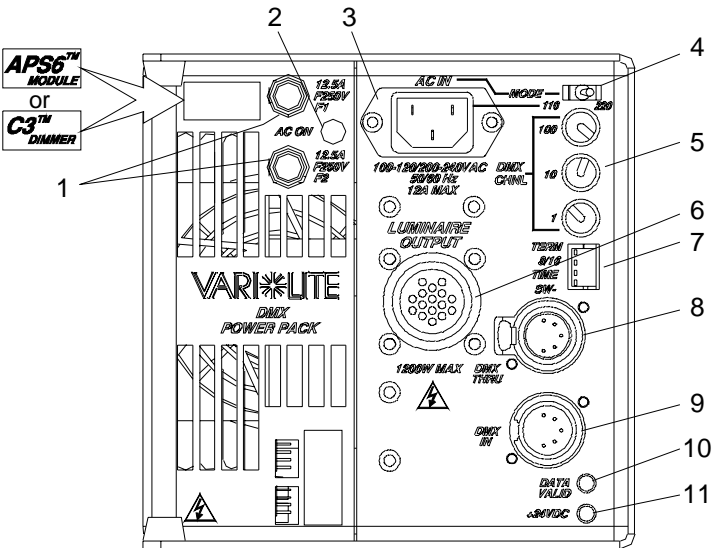
The DMX Power Pack (DPP) is a portable electronics chassis that provides lamp power and control to **Series 300™** luminaires. The unit interprets DMX-512 data and sends the appropriate VL Comm protocol to the luminaire. Two versions of the DPP are available: one for arc lamps (**VL6™** & **VL5Arc™** luminaires) and one for incandescent lamps (**VL5™** & **VL5B™** luminaires). The two versions are indicated with either an **APS6™** or **C3™** module marking on the unit's front panel. Either unit may be used with the **VLM™** moving mirror.

The DPP is used in conjunction with a DMX-512 control console to fully operate/test **Series 300** luminaires. This product's primary function is operating **Series 300** luminaires with DMX control at permanent installations. The DPP may also be used as a shop tool or demonstration device for **Series 300** luminaires.

1.2.1.1 Front Panel Controls and Indicators

The following controls and indicators are common for bothAPS6 module and C3 Dimmer DMX power pack versions.

No.	Name	Description
1	12.5A FUSES	Two 12.5 amp fuses for lamp power supply protection.
2	AC ON	Neon indicator. Lit when AC power is applied to unit and the fuses are good.
3	AC IN	Standard IEC inlet for AC power cord.
4	110/220V MODE	Toggle switch for 110V or 220V AC mode.
5	DMX CHANNEL	Three knobs for DMX address channel control (1, 10, 100 positions).
6	LUMINAIRE OUTPUT	16-pos. CPC connector provides power and data connection to luminaire.
7	DMX Parameter Dip switch	Four position dip switch for particular DMX parameters. Positions are as follows: <i>TERM</i> - Terminator, <i>8/16</i> - 8 or 16 bit DMX, <i>TIME</i> - DMX timing support, <i>SW4</i> - Open (no function).
8	DMX THRU	Five position XLR connector provides DMX through to other equipment.
9	DMX IN	Five position XLR connector provides DMX data input from controller.
10	DATA VALID	Flashing green LED indicates valid data received to unit.
11	24 VDC	Yellow LED indicates 24VDC is supplied to unit.





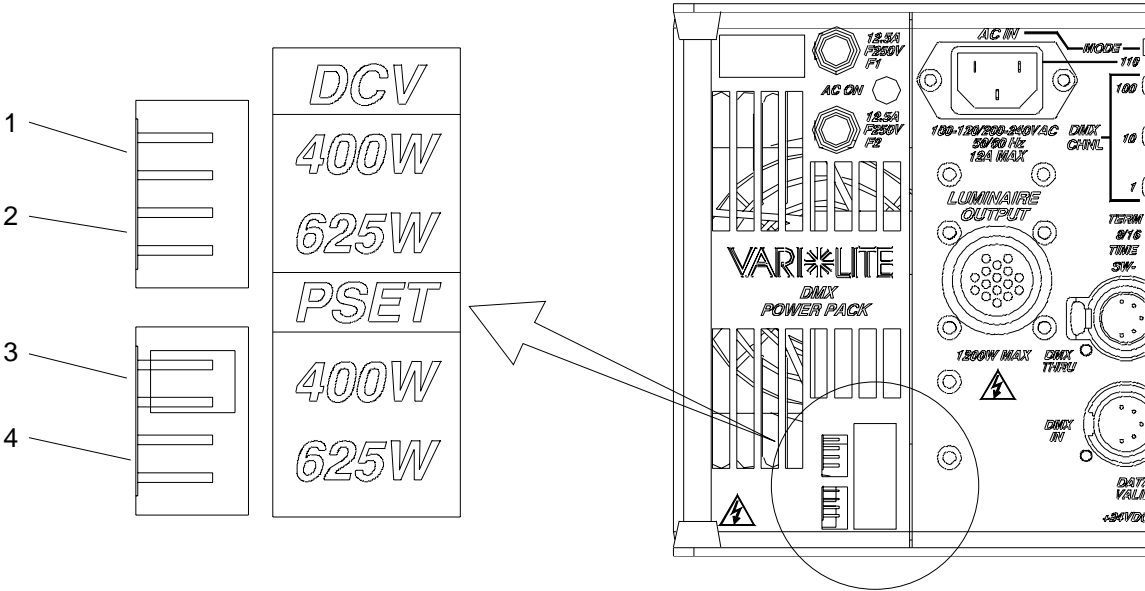
1.2.1.3    **APS6 Module Front Panel Jumpers**

The DCV mode allows DMX input signal to control remote start/douse of arc lamps (400W or 625W). The module *must* be in this mode to adjust intensity with a controller.

The PSET or Preset mode operates the module at one of two fixed level wattage's (400W or 625W). This mode is the normal mode of operation for the module.

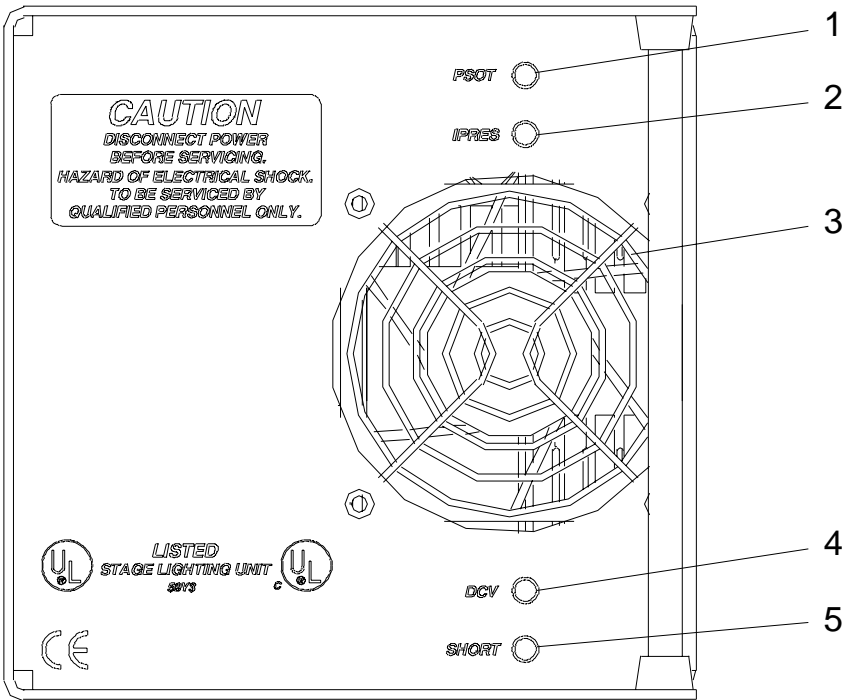
**Note:** APS6 module must be removed from unit to change jumper position. Refer to the Maintenance chapter in this manual.

No.	Name	Description
1	DCV 400W	Jumper window. Used to view position of a jumper which configures operation of a <b>VL6</b> luminaire using DMX signal to control remote start/douse of arc lamps.
2	DCV 625W	Jumper window. Used to view position of a jumper which configures operation of a <b>VL5Arc</b> luminaire DMX signal to control remote start/douse of arc lamps.
3	PSET 400W	Jumper window. Used to view position of a jumper which configures DPP to strike <b>VL6</b> lamp when power is applied to unit.
4	PSET 625W	Jumper window. Used to view position of a jumper which configures DPP to strike <b>VL5Arc</b> lamp when power is applied to unit.



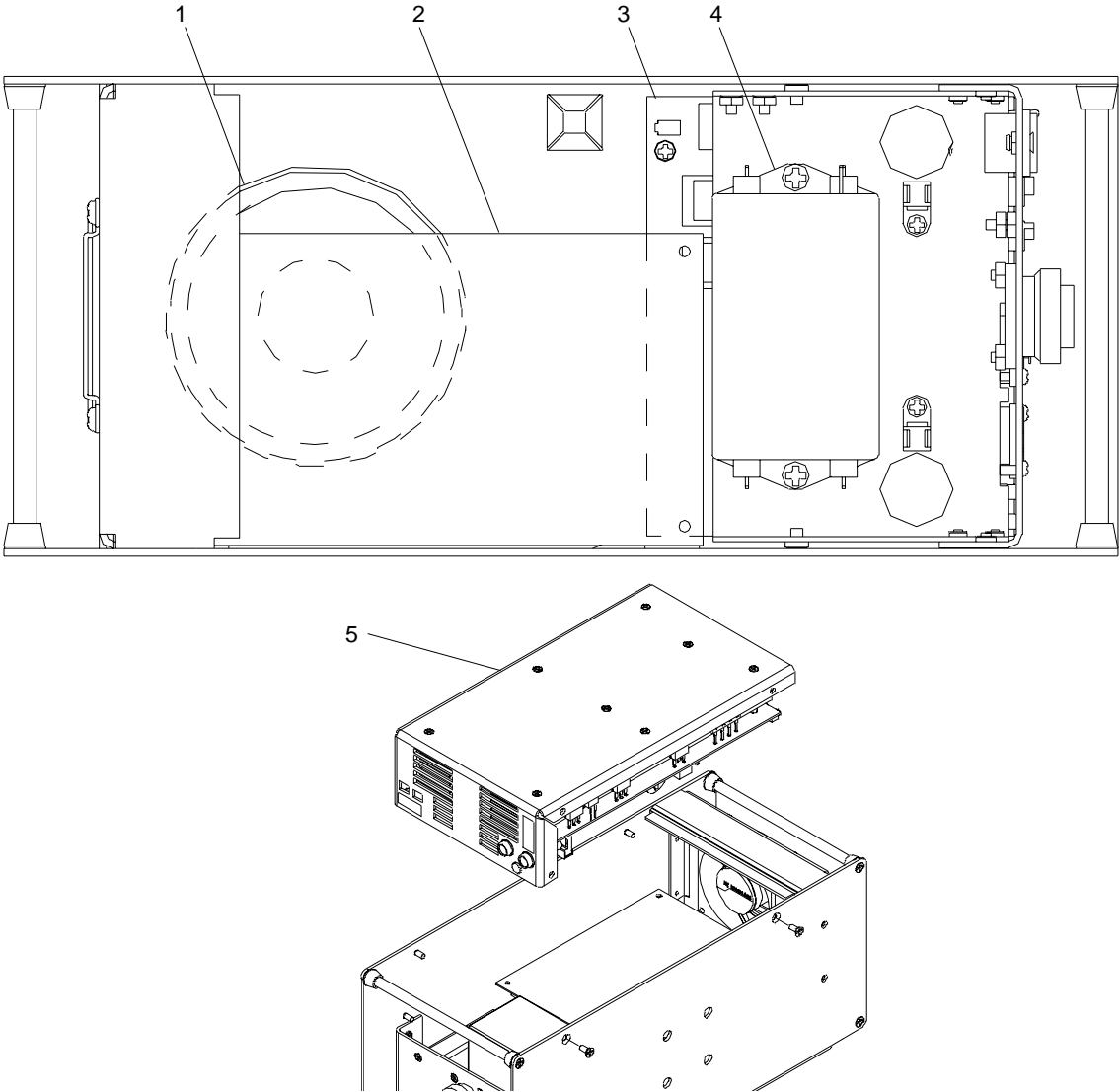
1.2.1.4 Rear Panel

No.	Name	Description
1	PSOT	<u>Amber LED</u> - Lights if power supply temperature becomes to high. Unit will switch off if temperature is too high.
2	IPRES	<u>Green LED</u> - Lights when output current to the lamp is present.
3	Cooling fan.	Pulls air through the chassis to cool the module and electronics.
4	DCV	<u>APS6 Module Amber LED</u> - Lights when DC control voltage is present. <u>C3 Dimmer Amber LED</u> - Lights when a DC control signal greater than zero volts is supplied to the intensity level control input.
5	SHORT	<u>APS6 Module Red LED</u> - Lit when power is applied to chassis. Goes off when voltage is present at the output. Lights again when lamp is started, then fades out in 20-30 sec. <u>C3 Dimmer Red LED</u> - Lit when power is applied to chassis. Stays lit until DC control signal is applied to take intensity above 0%.



1.2.1.5 Internal

No.	Name	Description
1	Toroid Choke	Provides stabilized current for lamp power.
2	Low Voltage Power Supply	Provides +24 volts DC for controller operation.
3	Controller PCB	Provides a junction location for internal wire connections and DMX control for <b>S300</b> luminaires.
4	EMI Filter	Reduces electronic emissions enabling controller to meet UL emission standards.
5	APS6 Module or C3 Dimmer	<b>APS6</b> provides lamp power to <b>VL5Arc/VL6</b> luminaires. <b>C3</b> provides lamp power to <b>VL5/VL5B</b> luminaires.



1.2.1.6 Technical Specifications

Functional and Performance Features

- Designed specifically to operate **VL5**, **VL5B**, **VL5Arc**, or **VL6** luminaires and **VLM** mirror with DMX control.
- Panel indicators for presence of AC power and +24VDC power.
- Internal low voltage power supply provides +24VDC to control circuits on modules.
- DMX channel switches and 120/240VAC switches on front panel.
- LED indicators on rear panel for power supply over-temperature, current present, DC voltage present, and short circuit indication.
- Internal fan provides filtered forced air cooling for electronics.
- DMX-512 compatible with dip switches for DMX termination, 8 or 16 bit operation, DMX timing (position four is open).
- UL, CSA, and TUV approved for safety. Meets CE requirements and FCC regulations.
- Black exterior finish.

Electrical Specifications

Input Voltage:	<b>APS6</b> module: 85 to 270 VAC, 50/60Hz <b>C3</b> module: 208-270 VAC, 50/60Hz
Input Current:	7.0A @ 208 VAC
Maximum Output Current:	<b>APS6</b> module: 12A <b>C3</b> module: 10A
Maximum Power Consumption:	1300W
Power Factor:	<b>APS6</b> module: >0.73 <b>C3</b> module: >0.98

Mechanical and Thermal Specifications

Dimensions:	15.2" x 6.5" x 6.5" (386mm x 165mm x 165mm)
Weight:	w/module: 13.2 pounds (6 kg) w/o module: 9 lbs. (4 kg)
Operating Temperature:	0-120°F (-18 to +49° C)

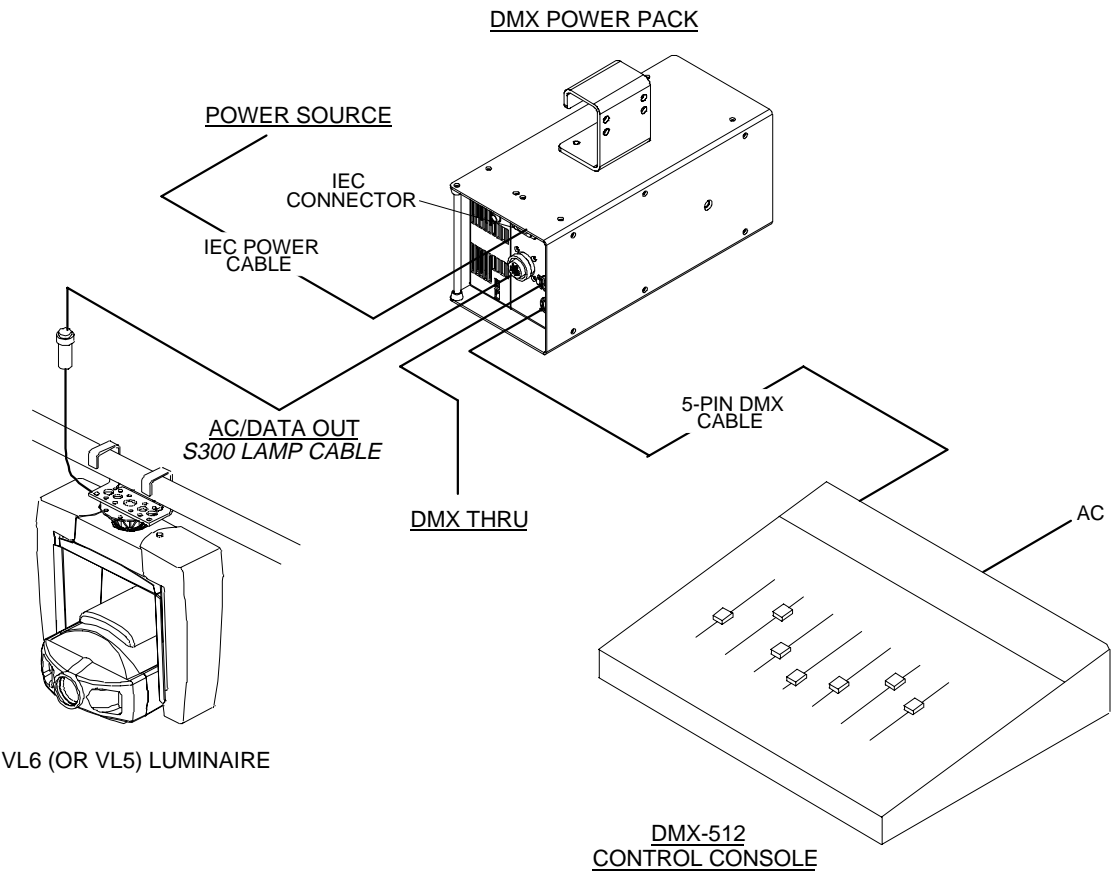
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# 1.3 Principles of Operation

## 1.3.1 System Connections

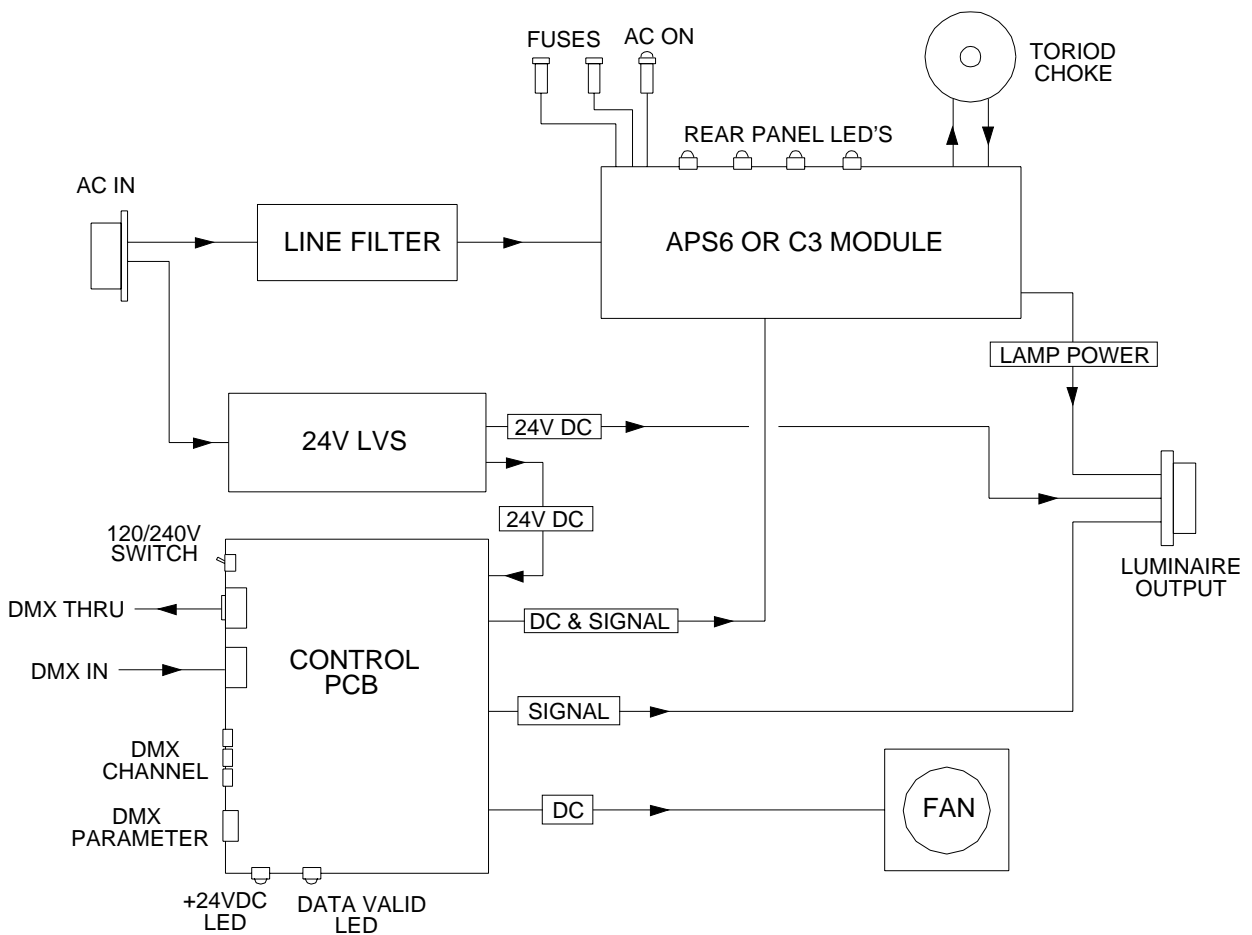
A typical system contains a power cable pigtail with an IEC plug for permanent installation use, DMX power pack (C3 or APS6 unit), a DMX-512 control console, and a VL5, VL5Arc, VL6 luminaire or VLM mirror. Unit power is supplied from a 110 or 220 volt source (C3 version is 220 volt only). DMX data signal is supplied from a DMX controller. Power and control signal are then supplied to the VL5, VL5Arc, VL6 luminaire or VLM mirror via the appropriate S300 lamp cable.



### 1.3.2 Internal Operation

AC power is supplied to the DMX power pack at the AC IN IEC connector on the front panel. Power is routed to the line filter and 24V Low Voltage power Supply (LVS). From the line filter, power is supplied to the **APS6** or **C3** module. The LVS supplies power to the control PCB and the luminaire output connector. The **APS6** or **C3** module and toroid choke provide lamp power to the output connector. Two 12.5A fuses protect the module and an AC ON neon that AC is applied to module.

DMX-512 is supplied directly to the control PCB. DC power and signal are supplied to the **APS6** or **C3** module. DC power is routed to the chassis cooling fan. Control signal is supplied the luminaire output connector. The control PCB also contains a 120/240V switch, DMX channel switches, DMX parameter dip switch, and +24VDC and data valid LED's.



# Chapter 2. Installation and Operation

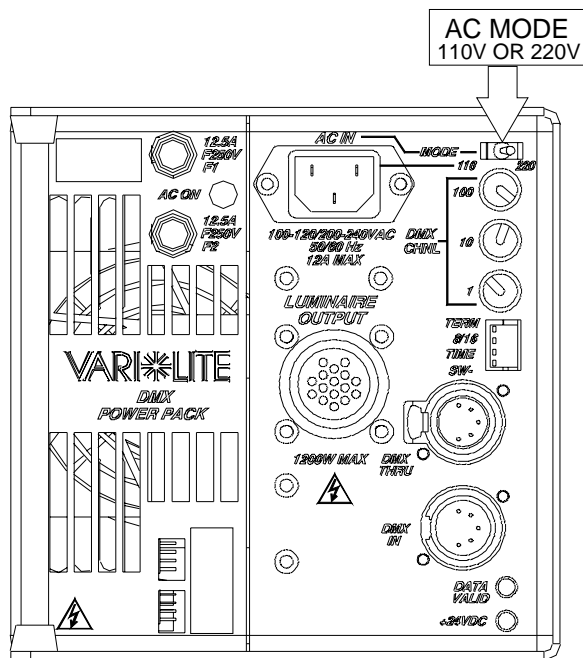
This chapter contains the following sections:

- 2.1 Installation/Checkout
- 2.2 Operation

Procedures for installing the DMX power pack are included in the installation section. The checkout procedure is included to ensure proper operation of the equipment after installation. Procedures for operation of the equipment under normal conditions are included in the Operating instructions section.

**WARNING:** DO NOT forget to position the voltage selector switch before powering up the unit. The DMX power pack uses a voltage selector switch to choose between 110 and 220 incoming voltage. This switch is recessed on the upper right corner of the front panel and is easily forgotten.

**CAUTION:** If the DMX power pack voltage selector switch is in the 110V position and the incoming voltage is 220V, serious DAMAGE WILL OCCUR when unit is powered up.

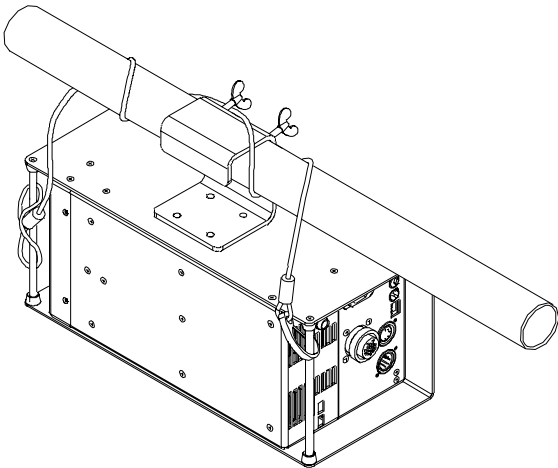


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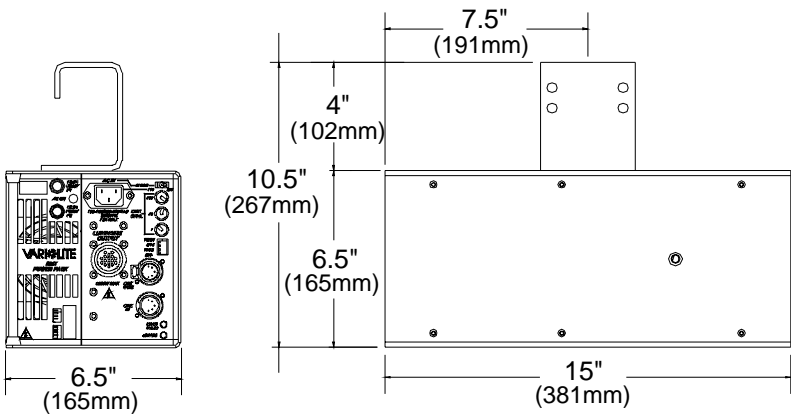
# 2.1 Installation/Checkout

## 2.1.1 Hanging Method

The DMX power pack is generally hung from pipes or trusses, and suspended near the luminaire. The truss hook fits securely on any pipe with an outer diameter between one and two inches (25.40 to 50.80 mm). *(The use of square pipe is not recommended.)* The truss hook is clamped to the pipe or truss by turning the wing bolts, installed in two of four threaded holes in the truss hook, clockwise. The wing bolt should be tightened only by hand. Do not use wrenches or other tools as this can damage the truss or the hook. Loop safety cable around the truss or pipe leaving as little slack as possible. Attach clip to the DPP handle.



The DMX power pack dimensions are as follows:

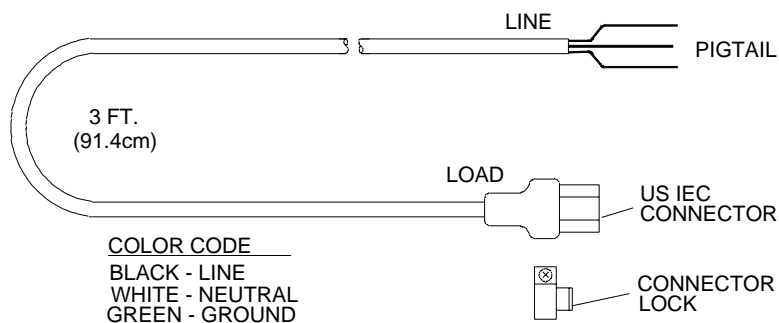


## 2.1.2 IEC Power Cables

The DMX power pack receives power through a three conductor power cable with a standard U.S. IEC connector on the front panel. The line side of the power cable may be hard-wired to the power source. The following two power cables are available:

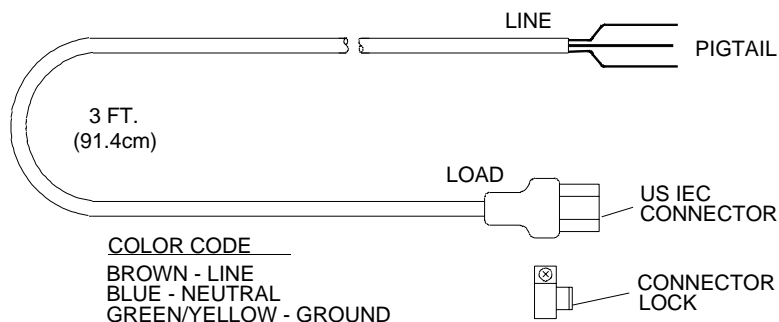
- **110 volt Pigtail** with Connector Lock, 3 ft.

Part No.: 25.9654.0042



- **220 volt Pigtail** with Connector Lock, 3 ft.

Part No.: 25.9654.0041



**CAUTION:** The DPP power cables listed above are rated for 15 amps. If a cable other than the two listed above are used, it must be rated for 15 amps or higher.

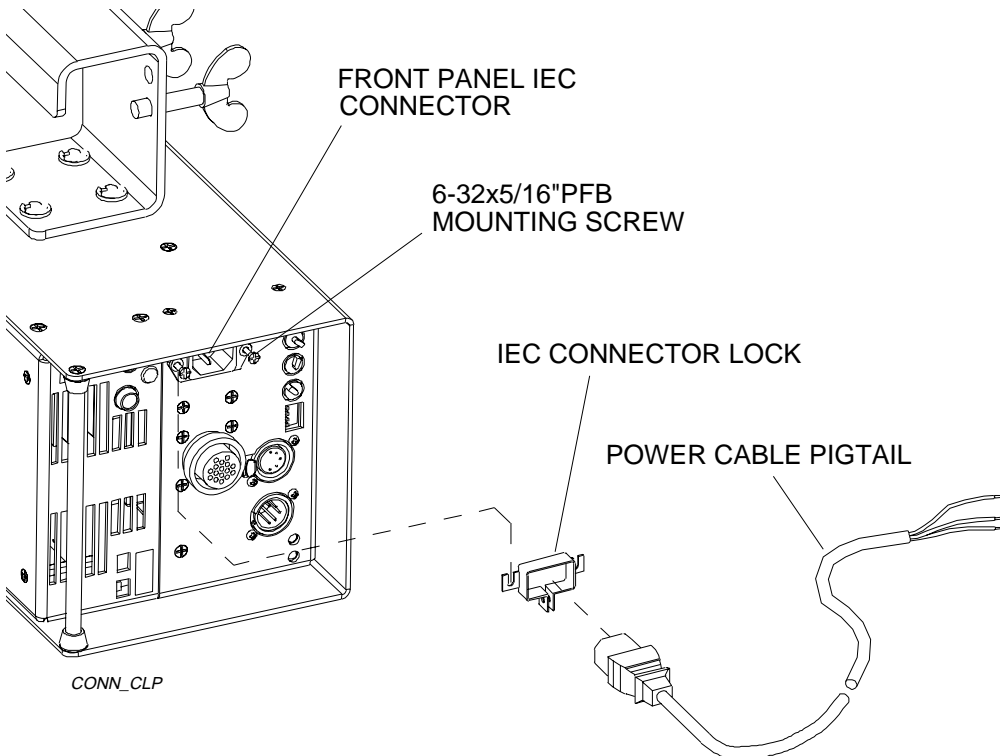
### 2.1.2.1 Connector Lock

The connector lock is used to secure the power cable to the DPP. The lock wraps around the cable connector end and is secured with a pinch screw. The lock is secured to the DPP front panel using the two IEC connector mounting screws.

Part No. 55.2242.0001 Lock, Connector, Cordset

#### To install the DPP power cable and connector lock:

- Step 1. At DPP front panel, use screwdriver to loosen two mounting screws securing IEC connector. Back screws out 1/8 inch (4mm). See figure below.
- Step 2. Slide connector lock between screw heads and IEC connector.
- Step 3. Insert power cable into IEC connector.
- Step 4. Using screwdriver, secure connector lock to power cable.
- Step 5. Using screwdriver, tighten two IEC connector mounting screws (secure connector lock and power cable to front panel).



### 2.1.3 Installation

**WARNING:** Do not apply power to unit until lamp and data connections are made and unit is properly configured. The DMX power pack does not contain a power circuit breaker. The unit will power up when connected to power source.

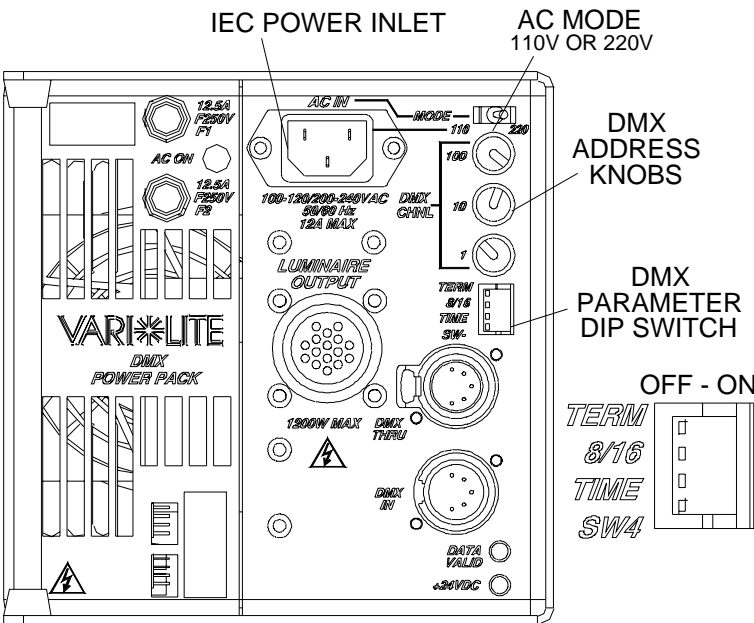
- Step 1. Ensure power is disconnected from unit.
- Step 2. Configure DMX power pack.

- a. Set toggle switch to proper voltage, 110V or 220V.  
(C3 module version is 220 volt only.)

**CAUTION:** It is *very important* to select the proper voltage switch setting. Serious equipment damage may result if unit is not configured properly when power is applied.

- b. Set DMX address knobs to proper address channel.
- c. Set DMX parameter dip switches to appropriate positions:
  - *TERM* DMX termination,
  - *8/16* 8 or 16 bit DMX,
  - *TIME* DMX timing support,
  - *SW 4* Open (no function).

**Note:** The DPP identifies the positions of the DMX parameter dip switches when the unit is powered up. Changes made after power up will have no effect until the DPP is reset.



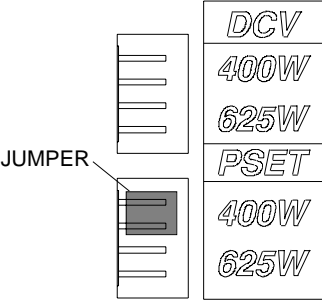


**Note:** The module must be removed from the chassis to configure the jumpers. Refer to **APS6/C3** Module Removal and Replacement section in Chapter 3 of this manual.

Step 3. Configure unit jumpers:

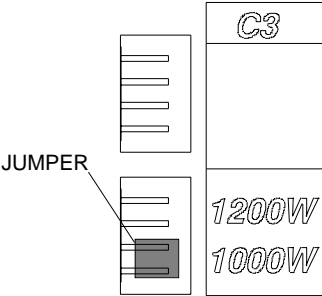
APS6 Module (VL5Arc & VL6 Luminaires)

- a. DCV 400W - When using a **VL6** luminaire and control console to start and douse lamp.
- b. DCV 625W - When using a **VL5Arc** luminaire and control console to start and douse lamp.
- c. PSET 400W - When starting a **VL6** luminaire by applying power to DPP.
- d. PSET 625W - When starting a **VL5Arc** luminaire by applying power to DPP.



C3 Dimmer (VL5 & VL5B Luminaires)

- a. 1200W - When using a **VL5/VL5B** luminaire with a 1200W lamp.
- b. 1000W - When using a **VL5/VL5B** luminaire with a 1000W lamp.



Step 4. Connect to system:

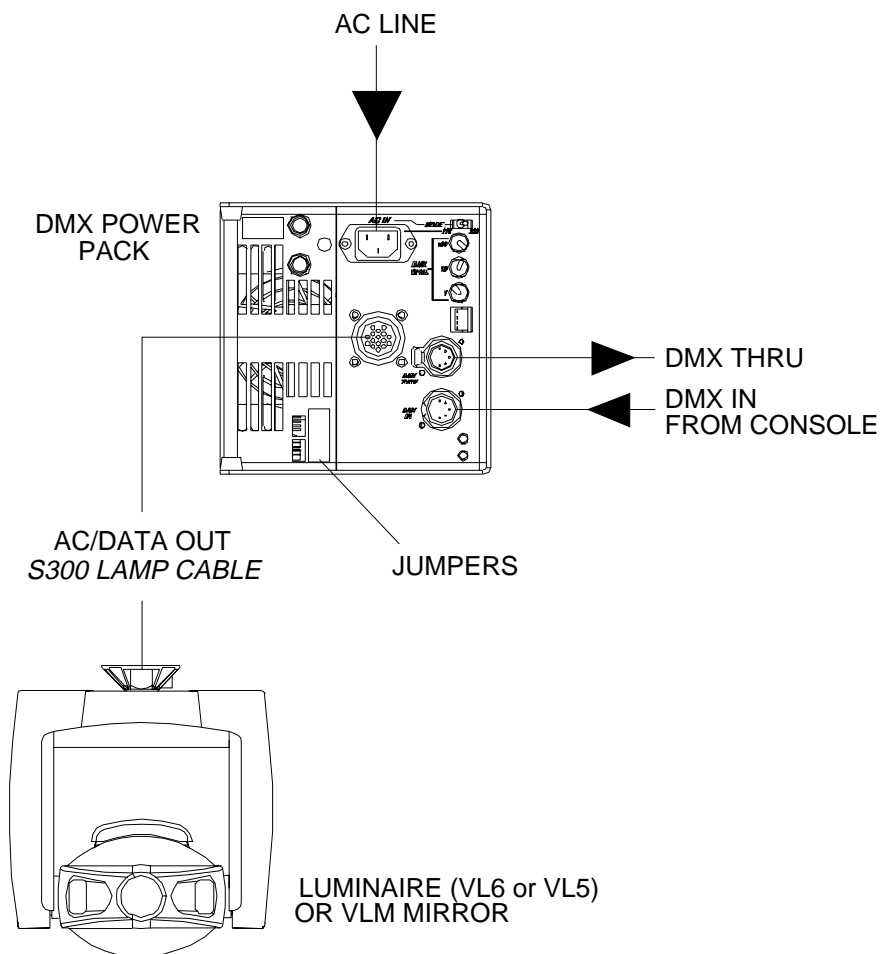
- a. At DMX IN, connect five position XLR data cable from controller.
- b. If needed, at DMX THRU, connect five position XLR data cable to next device.

---

**Note:** If no data is passing through unit to another DMX device, the DMX parameter dip switch *TERM* must be on.

---

- c. At LUMINAIRE OUTPUT, connect S300 lamp cable to luminaire.



- Step 5. Configure DMX control console channels.
- a. Switch DMX control console on.
  - b. At console, Patch address to console channels. There are four different configuration modes:
    - 8-Bit with reset,
    - 16-Bit with reset,
    - 8-Bit with timing,
    - 16-Bit with timing.

The following tables identify channels for each fixture.

---

**Note:** The first channel will be the DPP base address. All following channels will be the base address plus the corresponding number in the left column of the following tables.

*For example:* On a **VL5** luminaire, with the base address set to 1, the External Dimmer channel will be 1, the Pan channel will be 2, the Tilt channel will be 3, and so on.

---

---

**Note:** *Timing Control* - When configuring system in timing mode, the color, focus and beam transition times can be provided by three DMX channels. The end states of the associated parameters and their timing channels should be sent to the DPP in zero time. The DPP calculates the required transition rather than using incremental DMX instructions.

A timing value of zero is full speed. A time value of 100% or 255 causes the associated parameters to follow the cue timing data rather than the timing channel. (Intensity is always derived from cue timing data.)

Please note that some consoles may require use of a cue or a part cue with a “0” time being used for the timing channels to function properly. Please check your console operator’s manual.

---

8-Bit With Reset

DMX-512 Channel	VL5/VL5B Luminaire	VL5Arc Luminaire	VL6 Luminaire	VLM Moving Mirror
Base Address	External Dimmer*	Intensity	Intensity	Pan Hi
+1	Pan	Pan	Pan	Pan Low
+2	Tilt	Tilt	Tilt	Tilt Hi
+3	Blue	Blue	Wheel 1	Tilt Low
+4	Amber	Amber	Wheel 2	Rotation Speed >
+5	Magenta	Magenta	Beam Size	Rotation Speed <
+6	Diffuser	Diffuser	Lens	Unused
+7	Reset	Reset	Reset	Reset

16-Bit With Reset

DMX-512 Channel	VL5/VL5B Luminaire	VL5Arc Luminaire	VL6 Luminaire	VLM Moving Mirror
Base Address	External Dimmer*	Intensity	Intensity	Pan Hi
+1	Pan Hi	Pan Hi	Pan Hi	Pan Low
+2	Pan Low	Pan Low	Pan Low	Tilt Hi
+3	Tilt Hi	Tilt Hi	Tilt Hi	Tilt Low
+4	Tilt Low	Tilt Low	Tilt Low	Rotation Speed >
+5	Blue	Blue	Wheel 1	Rotation Speed <
+6	Amber	Amber	Wheel 2	Unused
+7	Magenta	Magenta	Beam Size	Unused
+8	Diffuser	Diffuser	Lens	Unused
+9	Reset	Reset	Reset	Reset

\* - The first channel controls the integral C3 Dimmer on VL5 and VL5B luminaires.

Reset

The last DMX channel allows the operator to ignite or douse the luminaire lamp and reset the luminaire from the DMX console. Refer to the “Operating Instructions” section later in this manual.

8-Bit With Timing

DMX-512 Channel	VL5/VL5B Luminaire	VL5Arc Luminaire	VL6 Luminaire	VLM Moving Mirror
Base Address	External Dimmer*	Intensity	Intensity	Pan Hi
+1	Pan	Pan	Pan	Pan Low
+2	Tilt	Tilt	Tilt	Tilt Hi
+3	Blue	Blue	Wheel 1	Tilt Low
+4	Amber	Amber	Wheel 2	Rotation Speed >
+5	Magenta	Magenta	Beam Size	Rotation Speed <
+6	Diffuser	Diffuser	Lens	Unused
+7	Focus Time	Focus Time	Focus Time	Focus Time
+8	Color Time	Color Time	Color Time	Unused
+9	Focus Time	Focus Time	Focus Time	Focus Time
+10	Beam Time	Beam Time	Beam Time	Unused
+11	Reset	Reset	Reset	Reset

16-BIT With Timing

DMX-512 Channel	VL5/VL5B Luminaire	VL5Arc Luminaire	VL6 Luminaire	VLM Moving Mirror
Base Address	External Dimmer*	Intensity	Intensity	Pan Hi
+1	Pan Hi	Pan Hi	Pan Hi	Pan Low
+2	Pan Low	Pan Low	Pan Low	Tilt Hi
+3	Tilt Hi	Tilt Hi	Tilt Hi	Tilt Low
+4	Tilt Low	Tilt Low	Tilt Low	Rotation Speed >
+5	Blue	Blue	Wheel 1	Rotation Speed <
+6	Amber	Amber	Wheel 2	Unused
+7	Magenta	Magenta	Beam Size	Unused
+8	Diffuser	Diffuser	Lens	Unused
+9	Focus Time	Focus Time	Focus Time	Focus Time
+10	Color Time	Color Time	Color Time	Unused
+11	Beam Time	Beam Time	Beam Time	Unused
+12	Reset	Reset	Reset	Reset

\* - The first channel controls the integral C3 Dimmer on VL5 and VL5B luminaires.

---

**Note:** For more information on DMX-512 control, refer to the “DMX Reference Guide” (02.3004.0300). This guide is available from Vari-Lite, Inc. or from our web site at [www.vari-lite.com/vl/downloads/downloads.html](http://www.vari-lite.com/vl/downloads/downloads.html).

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**WARNING:** DO NOT forget to position the voltage selector switch before powering up the unit. The DMX power pack uses a voltage selector switch to choose between 110 and 220 incoming voltage. This switch is recessed on the upper right corner of the front panel and is easily forgotten.

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**Note:** To achieve full rated power, a DPP with a **C3** Dimmer module must be powered by a 208-260VAC line voltage.

---

Step 6. At DPP, connect power cord and apply power.

---

**Note:** A 15 amp circuit breaker should be installed between the power source and the DPP. Make cable connections with the power source circuit breaker off.

---

- a. Connect power cord pigtail to source. Refer to IEC Power Cables section for color code.
- b. Insert cord receptacle into DPP front panel IEC connector and attach lock.
- c. Switch on power source circuit breaker. Verify that front panel AC ON indicator is lit.

---

**Note:** The DPP will ignite **VL5Arc** and **VL6** arc lamps when power is applied and system is properly connected in PSET mode.

---

- d. If AC ON indicator does not light, check power cable connection at DPP front panel. Ensure good cable connection at source.
- e. If problem persists, refer to the “Troubleshooting” section in Chapter 3.

Step 7. After luminaire calibration, verify that luminaire is receiving control data.

- a. If luminaire does not respond to control data, check DPP base address, DMX parameter switch settings and DMX control console channel configuration.
- b. If problem persists, refer to the “Trouble Shooting” section in Chapter 3.

---

**Note:** The last channel allows remote start and douse of arc lamps.

---

Step 8. If in DCV mode, ignite arc lamp

- a. Set last DMX channel to 99% (or 252) for three seconds and return to zero.
- b. To douse lamp, set last DMX channel to 66% (or 168) for three seconds and then return to zero.

---

**CAUTION:** Be sure to run arc lamps at least three minutes before dousing to avoid vaporized material deposits in the cool portions of the bulb. This will cause the lamp to turn black and burn-out early.

---

Step 9. To control incandescent lamps (**C3 Dimmer**) from control console, set intensity channel to desired level.

## 2.2     Operating Instructions

The DMX power pack is available in two versions, **APS6** and **C3** modules. It is important to note a few differences in operating arc or incandescent lamps.

### 2.2.1     Controlling Arc Lamps (*VL5Arc/VL6*)

#### PSET Mode

- To ignite, apply power unit.
- To douse, remove power from unit.

#### DCV Mode

- To start, apply power to unit, or, if using DCV mode, set last DMX channel to 99% (or 252) and return to zero.
- To douse, unplug unit or, if using DCV mode, set last DMX channel to 66% (or 168) for three seconds and then return to zero.

**CAUTION:** Do not operate the arc lamp in the range between 50% and 62% for extended periods of time. This will drastically reduce the life of the lamp. (Arc extinguishes at levels below 50%).

Fader Level	Arc Lamp Response
100%	Lamp at full intensity.
64% thru 100%	Lamp intensity varies. ( <i>Not Recommended</i> )
63%	Standby
50% thru 62%	Insufficient lamp current. Will damage lamp if left for extended periods.
below 50%	Lamp douses.

### 2.2.2     Controlling Incandescent Lamps (*VL5/VL5B*)

#### All Modes

- To start, plug in unit and turn on console.
- Set first DMX channel to desired intensity level (between 5% and 100%).



## Chapter 3. Maintenance Procedures

This chapter contains the following sections:

- 3.1 Calibration Procedures
- 3.2 Fault Isolation
- 3.3 Maintenance Procedures

### Periodic Maintenance

Refer to **Series 200™** System Equipment Preparation and Inspection Manual (02.3004.0042) for periodic maintenance procedures for new and used equipment.

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## 3.1 Calibration Procedures

No calibration procedure is available for the DMX power pack's 24V power supply. The +24VDC indicator LED on the front panel will signify an operational power supply. Test and calibration procedures for the **APS6** and **C3** modules are included in the **Series 300** Modular Rack Service Manual (02.9640.0010).

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**WARNING:** NEVER apply power to the DMX power pack when the unit is open. Serious injury could occur if unit is opened while connected to power.

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## 3.2 Fault Isolation

### 3.2.1 Fault Isolation Chart

Assuming that all other system components, including lamp run and power cables, are functional and that proper system power has been supplied:

Symptom	Probable Cause	Corrective Action
No power to DMX power pack	<ul style="list-style-type: none"><li>Loose power cable connector</li><li>Faulty PCB or PCB connection</li></ul>	para. 3.2.2.1
Intermittent power to DMX power pack	<ul style="list-style-type: none"><li>Loose power cable connector</li><li>Faulty PCB or PCB connection</li><li>Loose toroidal transformer</li></ul>	para. 3.2.2.2
DMX power pack does not strike <b>VL6/VL5Arc</b> luminaire lamp	<ul style="list-style-type: none"><li>Module jumper configuration</li><li>Module 12.5A fuses</li><li>Lamp cable connection</li><li>PCB connections</li><li>Faulty module</li><li>Faulty lamp cable</li></ul>	para. 3.2.2.3
DMX power pack does not allow manual intensity control of <b>VL5</b> luminaires	<ul style="list-style-type: none"><li>Module jumper configuration</li><li>Module 12.5A fuses</li><li>Lamp cable connection</li><li>PCB connections</li><li>Faulty module</li><li>Faulty lamp cable</li></ul>	para. 3.2.2.4
DMX power pack determined to be faulty	<ul style="list-style-type: none"><li>Faulty power supply</li><li>Faulty PCB assembly</li></ul>	para. 3.2.2.5
<b>VL5</b> 1000W lamp very bright then burns out	<ul style="list-style-type: none"><li><b>C3</b> module configured for 1200W operation</li></ul>	para. 3.2.2.6
<b>VL5</b> 1200W lamp operating very dim	<ul style="list-style-type: none"><li><b>C3</b> module configured for 1000W operation</li></ul>	para. 3.2.2.7
<b>VL5Arc</b> 575W lamp operating very dim	<ul style="list-style-type: none"><li><b>APS6</b> module configured for 400W operation</li></ul>	para. 3.2.2.8
<b>VL6</b> 400W lamp very bright then burns out	<ul style="list-style-type: none"><li><b>APS6</b> module configured for 625W operation</li></ul>	para. 3.2.2.9
DMX power pack shuts off unexpectedly	<ul style="list-style-type: none"><li>Power pack has overheated</li></ul>	para. 3.2.2.10

---

### 3.2.2 Fault Isolation Procedures

Assuming the following:

- Lamp run and power cables are good.
- Proper system power has been supplied.
- Luminaire is fully operational.

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**WARNING:** Disconnect power by unplugging the power cable from outlet or front panel when working on internal components of the DMX power pack.

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#### 3.2.2.1 No Power to DMX power pack

- Step 1. At wall outlet, unplug power cable.
- Step 2. At power pack front panel, check connection of power cable connector. Ensure good connection.
- Step 3. Check all PCB connections.
- Step 4. If problem still persists, replace PCB. Refer to Controller PCB Removal and Replacement paragraph.

---

#### 3.2.2.2 Intermittent Power to DMX Power Pack

- Step 1. At wall outlet, unplug power cable.
- Step 2. At power pack front panel, check connection of power cable connector. Ensure good connection.
- Step 3. Check/change wall outlet connection.
- Step 4. Remove power from unit, remove module, and check all PCB connections and toroid mounting.
- Step 5. If problem still persists, disconnect power and remove controller PCB. Refer to controller PCB Removal and Replacement paragraph. Using compressed air or Blue Shower Tech Spray, clean controller PCB. Re-install.
- Step 6. If problem still persists, replace controller PCB. Refer to controller PCB Removal and Replacement paragraph.

---

### 3.2.2.3 DMX Power Pack Does Not Strike VL6/VL5Arc Luminaire Lamp

- Step 1. Ensure that **APS6** module jumper is configured in the PSET mode (400W or 625W). Refer to the Installation section in Chapter 2 of this manual.
- Step 2. Ensure that power is supplied to power pack and AC ON indicator is lit.
- Step 3. If problem still persists, remove power and check two 12.5A fuses on front panel.
- Step 4. Verify that **Series 300** lamp cable is properly connected. Refer to Installation section in Chapter 2.
- Step 5. Replace luminaire lamp or entire luminaire with known good unit.
- Step 6. If problem persists, remove **APS6** module and check PCB connections.
- Step 7. If problem still persists, replace **APS6** module. Refer to **APS6/C3** module Removal and Replacement paragraph.
- Step 8. Replace **Series 300** lamp cable.
- Step 9. If problem still persists, replace DPP.

---

### 3.2.2.4 DMX Power Pack Does Not Allow Manual Intensity Control Of VL5 Luminaires

- Step 1. Ensure that **C3** module jumpers are configured to appropriate lamp wattage. Refer to Installation section in Chapter 2 of this manual.
- Step 2. Ensure that power is supplied to power pack and AC ON indicator is lit.
- Step 3. If problem still persists, remove power and check two 12.5A fuses on front panel.
- Step 4. Verify that **Series 300** lamp cable is properly connected. Refer to Installation/Checkout section in Chapter 2.
- Step 5. Replace luminaire lamp or entire luminaire with known good unit.
- Step 6. If problem persists, remove **C3** module and check PCB connections.
- Step 7. If problem still persists, replace **C3** module. Refer to **APS6/C3** module Removal and Replacement paragraph.
- Step 8. Replace **Series 300** lamp cable.

Step 9. If problem still persists, replace power pack.

3.2.2.5 DMX Power Pack Determined To Be Faulty

- Step 1. Remove power, module, and check all PCB connections.
- Step 2. Replace power pack LVS power supply. Refer to LVS Power Supply Removal and Replacement paragraph.
- Step 3. Replace controller PC board. Refer to controller PCB Removal and Replacement paragraph.

3.2.2.6 VL5 1000W Lamp Very Bright Then Burns Out

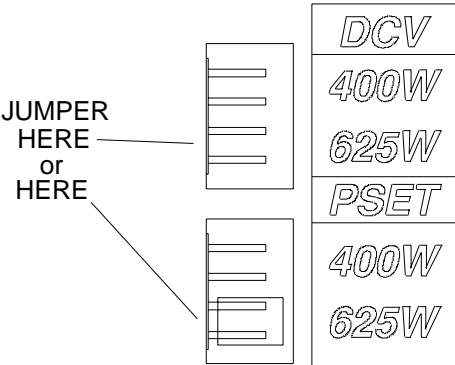
- Step 1. At C3 module, check position of programming jumper:
- a. At jumper window, check position of programming jumper. Jumper should be installed in the 1000W position for 1000W operation.
- Step 2. Move jumper as needed. Refer to Operating Instructions paragraph in Chapter 2.

3.2.2.7 VL5 1200W Lamp Operating Very Dim

- Step 1. At C3 module, check position of programming jumper:
- a. At jumper window, check position of programming jumper. Jumper should be installed in the 1200W position.
- Step 2. Move jumper as needed. Refer to Operating Instructions paragraph in Chapter 2 of this manual.

3.2.2.8 VL5Arc 575W Lamp Operating Very Dim

- Step 1. At APS6 module, at DCV/PSET window, check position of jumper assembly. Jumper should be installed in the 625W DCV or 625W PSET position as required.

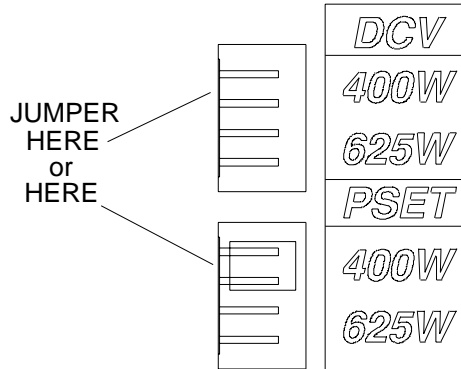


- Step 2. Move jumper as needed. Refer to Operating Instructions paragraph in Chapter 2 of this manual.



### 3.2.2.9 VL6 400W Lamp Very Bright Then Burns Out

- Step 1. At **APS6** module, at DCV/PSET window, check position of jumper assembly. Jumper should be installed in the 400W DCV or 400W PSET position as required.



- Step 2. Move jumper as needed. Refer to **APS6** Operating Instructions paragraph in Chapter 2 of this manual.
- Step 3. If unit is properly configured, the **VL6** luminaire's head overtemp switch may have dowsed the lamp.

### 3.2.2.10 DMX Power Pack Shuts Down Unexpectedly

- Step 1. At power pack rear panel, observe PSOT LED. If PSOT LED is lit the unit has overheated and switched off.
- Remove power from power pack.
  - Allow unit to cool down for 30 minutes.
- Step 2. Observe SHORT LED. IF SHORT LED is lit a short has occurred within the unit.
- Remove power form power pack.
  - Remove module. Refer to Module Removal and Replacement paragraph in this chapter.
  - Check internal wiring connections and grounding lugs.
  - Check LVS and control PCB for loose mounting.

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## 3.3 Maintenance Procedures

### 3.3.1 C3/APS6 Module Removal and Replacement

**Parts:**

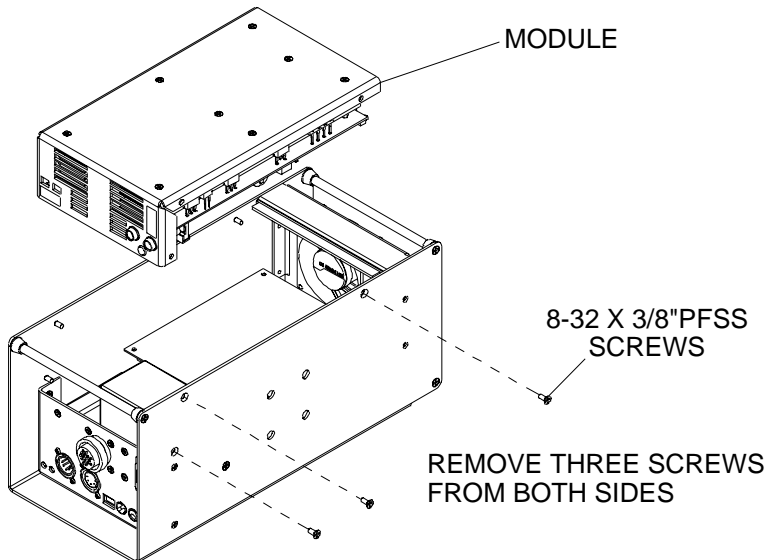
- 1 EA ASSY, LPS PLATE PP C3 DIMMER (21.9654.0004)
- 1 EA ASSY, LPS PLATE PP APS6 (21.9654.0006)

**Tools:**

Screwdriver, Phillips #2

**To remove and replace the C3/APS6 module:**

- Step 1. Remove power from power pack.
- Step 2. Using screwdriver, remove six 8-32 x 3/8" PFSS screws securing module to enclosure. See **Figure 3-1**.



**Figure 3-1. C3/APS6 Module Removal**

- Step 3. With module partially removed, disconnect white 24-pos cable connector from module PCB header.
- Step 4. Remove module.
- Step 5. Replace module using Steps 2 through 4 in reverse.

**Note:** Use the following procedure to change the jumper position for the **C3** dimmer and **APS6** module.

### 3.3.2 C3/APS6 Module Jumper Change

- Parts:**  
No parts required. Replacement jumper part number is 52.6399.0001.
- Tools:**  
Screwdriver, Phillips #2

**To module jumper location:**

- Step 1. Remove module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. At lower left corner of module PCB, move blue jumper to desired location.
- Step 3. Replace module. Refer to **C3/APS6** Module Removal and Replacement paragraph.

**Note:** Refer to Chapter 1 for jumper location descriptions.

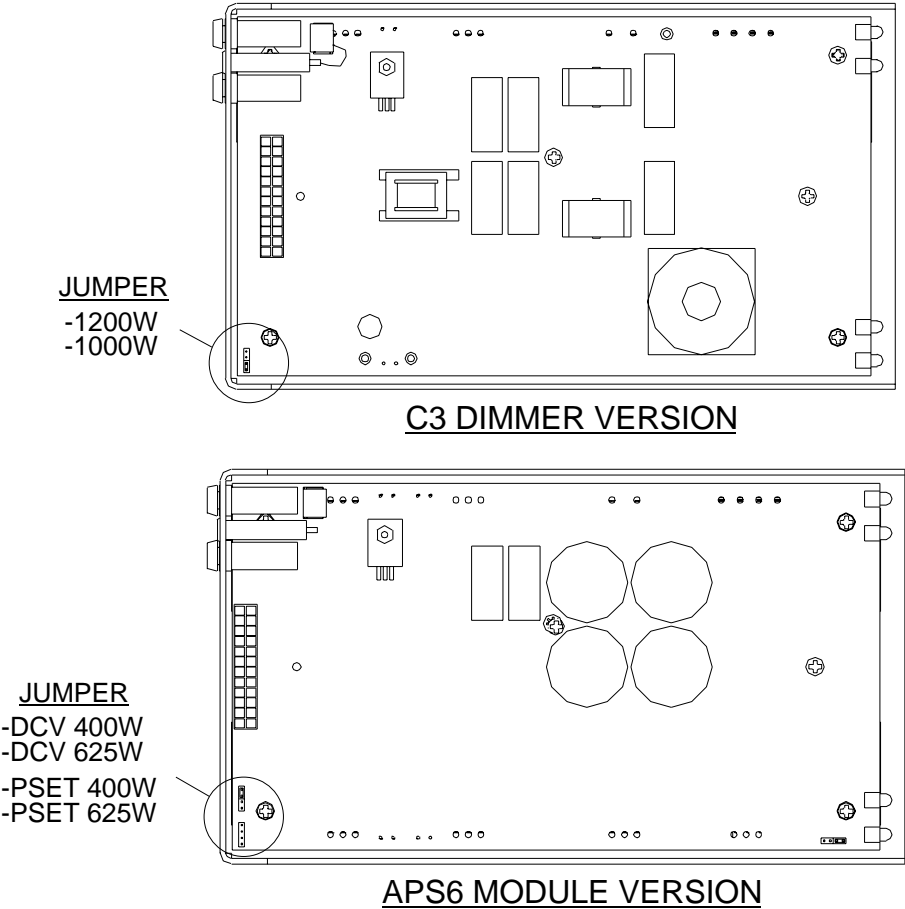


Figure 3-2. Module Jumper Locations

### 3.3.3 C3/APS6 Module PCB/Heatsink Removal and Replacement

**Parts:**

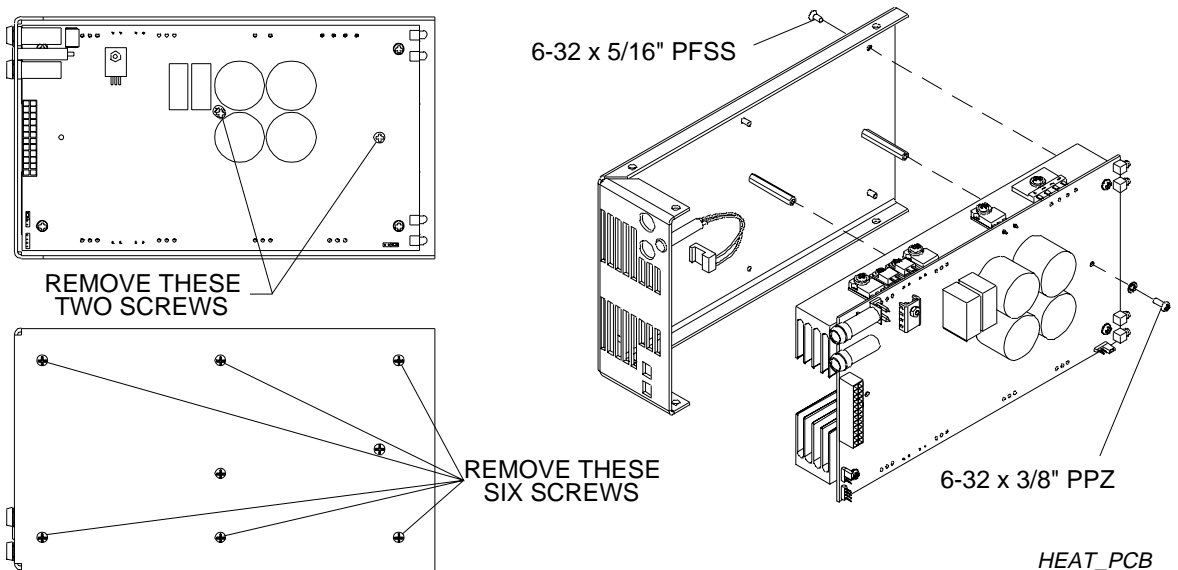
- 1 EA ASSY, HEATSINK PP C3 DIMMER (23.9654.0005)
- 1 EA ASSY, HEATSINK PP APS6 MODULE (23.9654.0007)

**Tools:**

Screwdriver, Phillips #2

**To remove and replace the C3/APS6 module PCB/Heatsink assembly:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. At module PCB, remove AC ON indicator 3-pos MTA connector from header at P2 NEON.
- Step 3. Using screwdriver, remove two 6-32 x 3/8" PPZ screws and #6 lock washers shown in **Figure 3-3**.
- Step 4. At back side of LPS plate, remove six 6-32 x 5/16" PFSS screws as shown in **Figure 3-3**. Remove PCB/heatsink assembly.
- Step 5. Replace PCB/heatsink assembly using Steps 2 through 4 in reverse.



**Figure 3-3. C3/APS6 PCB/Heatsink Removal**

### 3.3.4 Power Supply Removal and Replacement

**Parts:**

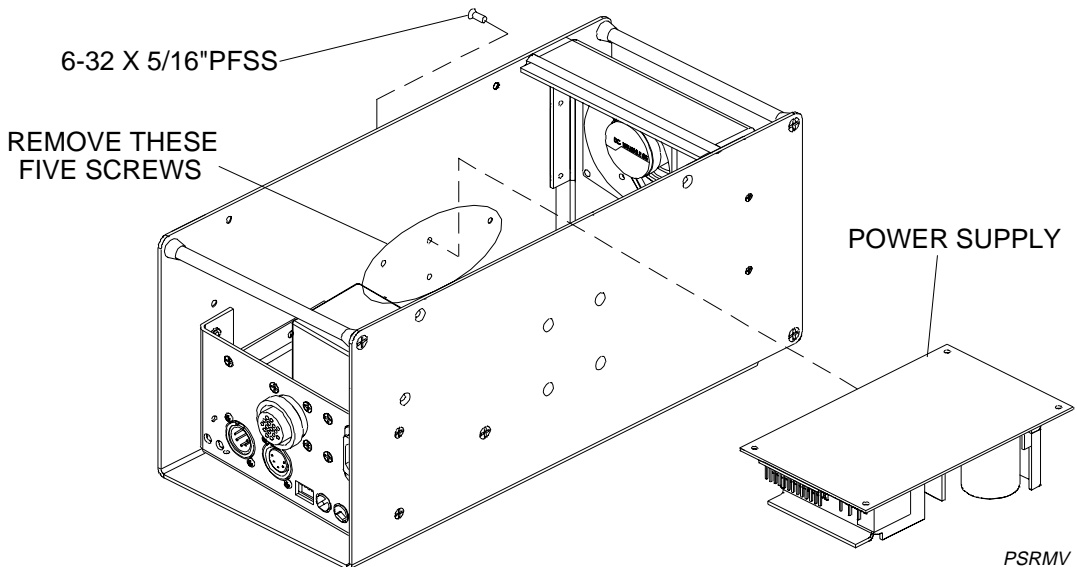
1 EA POWER SUPPLY, 110W -140W +24VDC (69.3121.0001)

**Tools:**

Screwdriver, Phillips #2

**To remove and replace the power supply assembly:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. At bottom of enclosure, remove five 6-32 x 5/16" PFSS screws securing power supply.
- Step 3. At power supply remove 13-pos and 5-pos connectors from power supply headers.
- Step 4. Remove power supply.
- Step 5. Replace power supply using Steps 2 through 4 in reverse.



**Figure 3-4. Power Supply Removal**

### 3.3.5 Toroid Assembly Removal and Replacement

**Parts:**

1 EA ASSY, TOROID APS/C3 PP (23.9654.0019)

**Tools:**

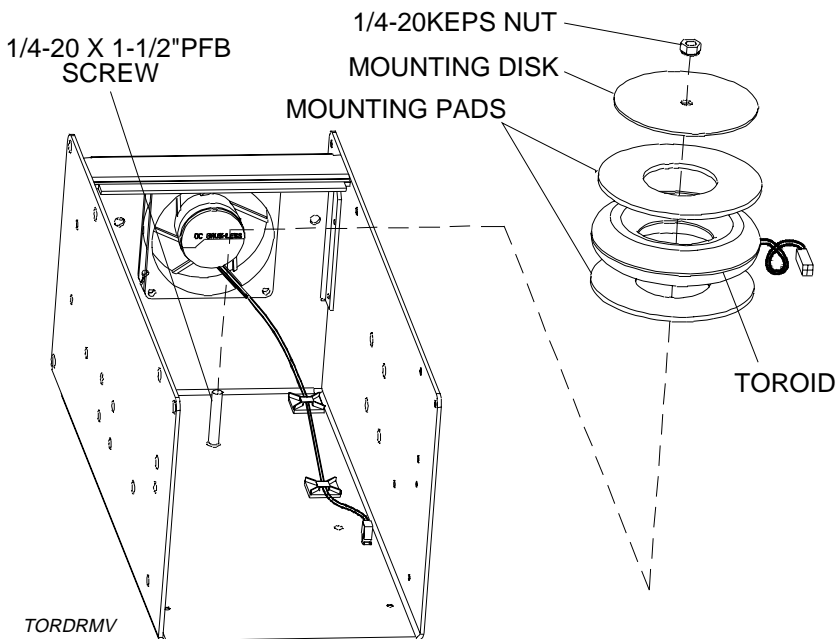
Screwdriver, Phillips #2

Screwdriver, Phillips #3

Nutdriver, 7/16"

**To remove and replace the toroid assembly:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. At toroid, disconnect 4-pos wire connector.
- Step 4. Using #3 Phillips screwdriver and 7/16" nutdriver, remove 1/4-20 x 1-1/2" PFB screw and 1/4-20 SS KEPS nut securing toroid assembly to enclosure (**Figure 3-5**). Remove toroid.
- Step 5. Separate two mounting pads and one mounting disk from toroid.
- Step 6. Replace toroid using Steps 1 through 5 in reverse.



**Figure 3-5. Toroid Removal**

**Note:** The previous illustration shows the front panel assembly removed, but it is not necessary to remove it to perform the procedure.

### 3.3.6 Fan Assembly Removal and Replacement

**Parts:**

- 1 EA FAN, +24V 80X80X25MM 32CFM (40.7113-0001)
- 1 EA RECEPT, MTA100, W/TAB, BLU, 2POS, 26AWG (52.6396.2602)
- 1 EA COVER, STRAIN RELIEF, 2POS, 26AWG (52.6424.0002)
- 2 EA CABLE TIE, SMALL, .10 X 4"

**Tools:**

- Screwdriver, Phillips #2
- Wrench, 3/8"
- AMP connector tool, MTA100
- Wire cutters

**To remove and replace the fan assembly:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Using wire cutters, cut and remove two cable ties securing fan wires to anchors.
- Step 4. Disconnect 2-pos MTA100 fan wire connector from control PCB at J1 FAN.
- Step 5. Using screwdriver and 3/8" wrench, remove four 8-32 x 9/16" PPSS screws and 8-32 KEPS nuts securing fan and grill assembly to enclosure. Remove fan and grill assembly **Figure 3-6**.
- Step 6. At new fan assembly, trim wires 11 inches (280mm) from fan to end of wire.
- Step 7. Twist wires together approximately ten times.
- Step 8. Using AMP connector tool, install new 2-pos connector to fan wires with red wire in position 1 and black in position 2.
- Step 9. Using screwdriver and 3/8" wrench, install and secure new fan assembly to enclosure using removed hardware.
- Step 10. At control PCB, connect 2-pos fan wire connector to PCB at J1 FAN.
- Step 11. Using two cable ties, secure fan wires to cable anchors and trim excess cable tie.



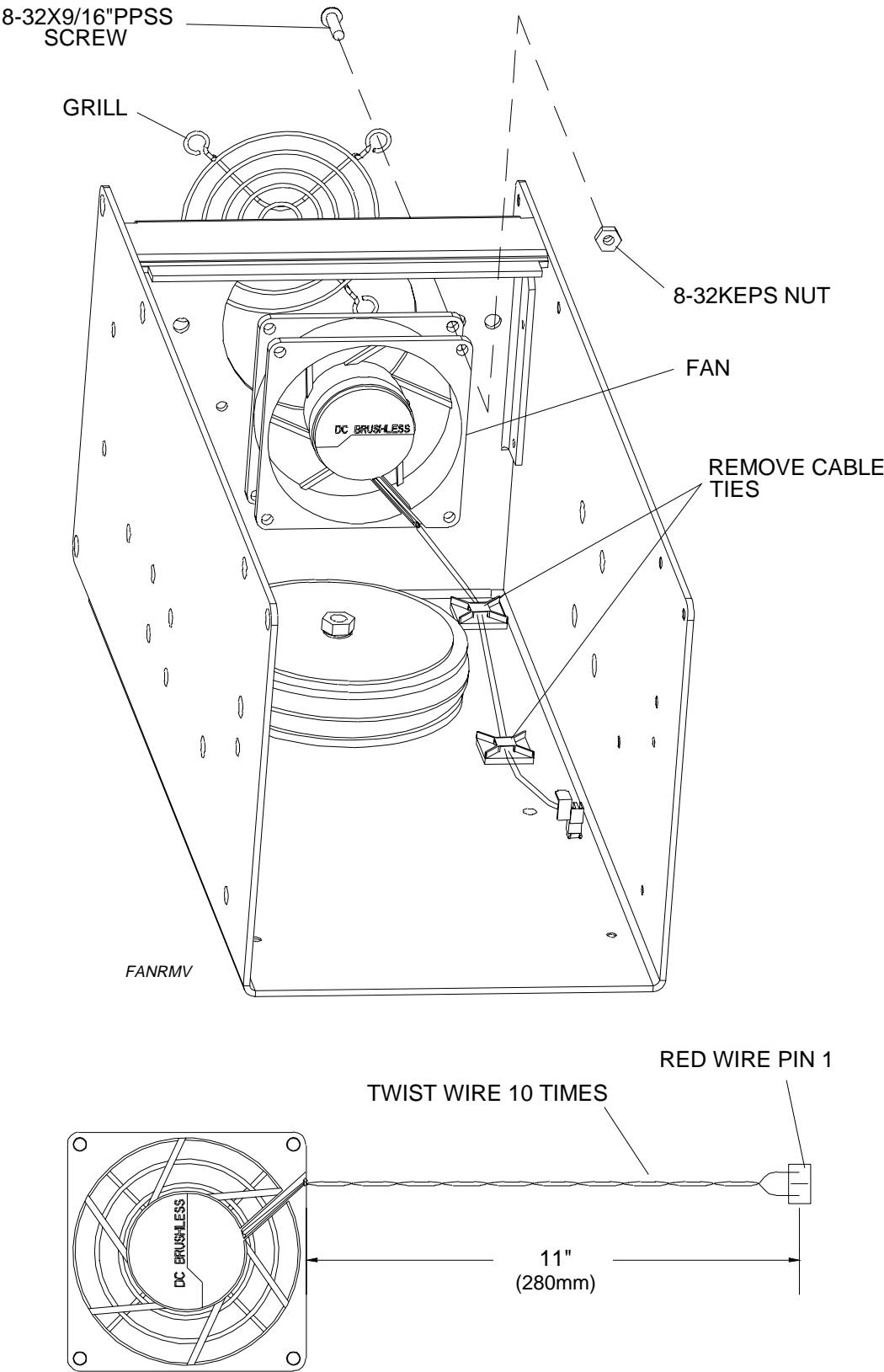


Figure 3-6. Fan Removal and Connector Installation

### 3.3.7 Front Panel Removal

**Parts:**

No parts necessary.

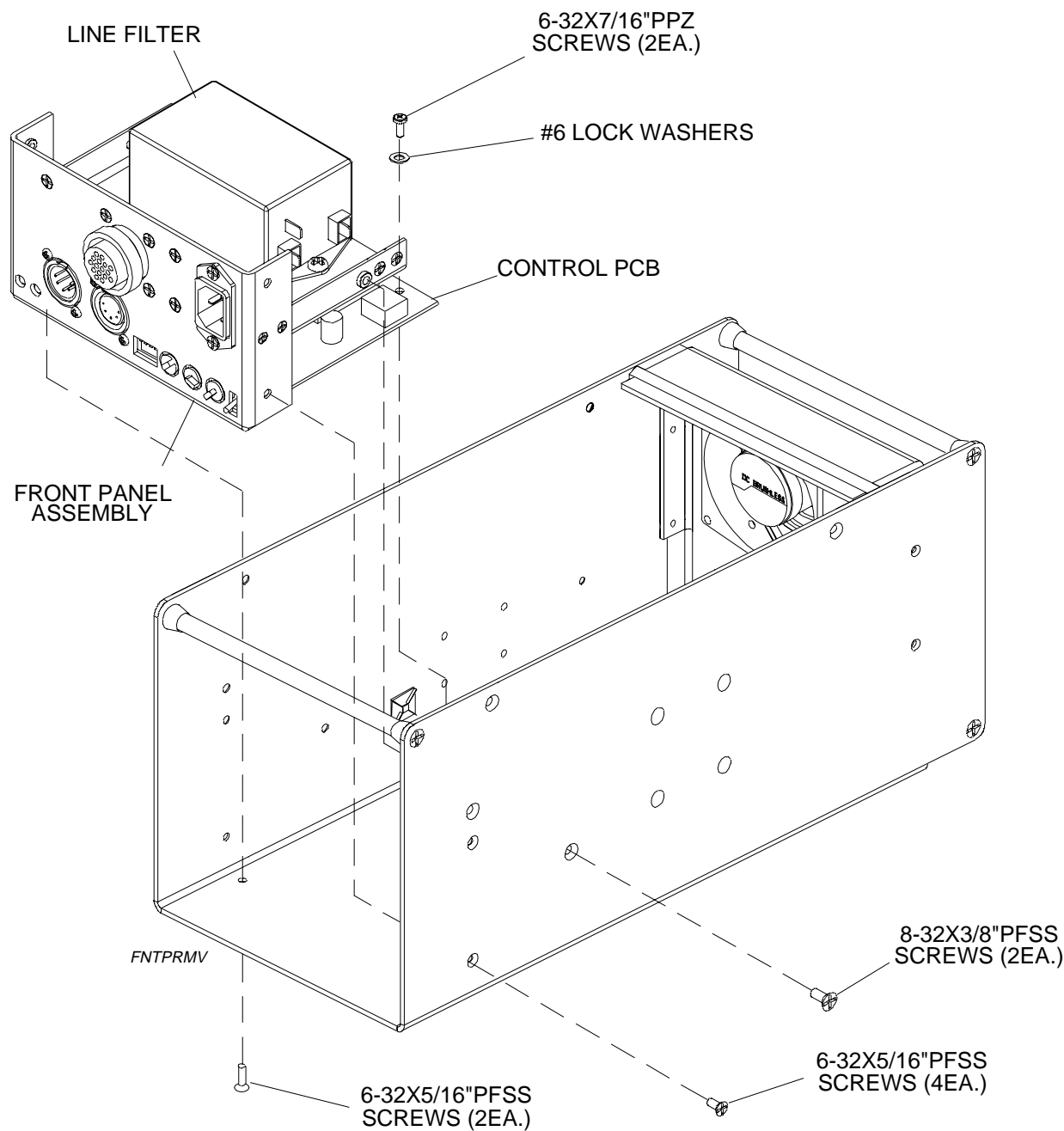
**Tools:**

Screwdriver, Phillips #2

Wire cutters

**To remove the front panel assembly:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Disconnect wires:
  - a. 4-pos connector at toroid.
  - b. 2-pos fan wire MTA 100 at control PCB J1 FAN.
- Step 4. Remove mounting screws and cable ties (**Figure 3-7**):
  - a. At top and bottom of enclosure, 8-32 x 3/8"PFSS and two 6-32 x 5/16"PFSS screws.
  - b. At right side, two 6-32 x 5/16"PFSS screws.
  - c. At back of control PCB, two 6-32 x 7/16"PPZ screws and #6 lock washers.
  - d. Using wire cutters, remove any cable ties securing front panel wires to enclosure.
- Step 5. Remove front panel assembly from enclosure.
- Step 6. Replace front panel assembly using Steps 2 through 5 in reverse.



**Figure 3-7. Front Panel Assembly Removal**

### 3.3.8 Line Filter Removal and Replacement

**Parts:**

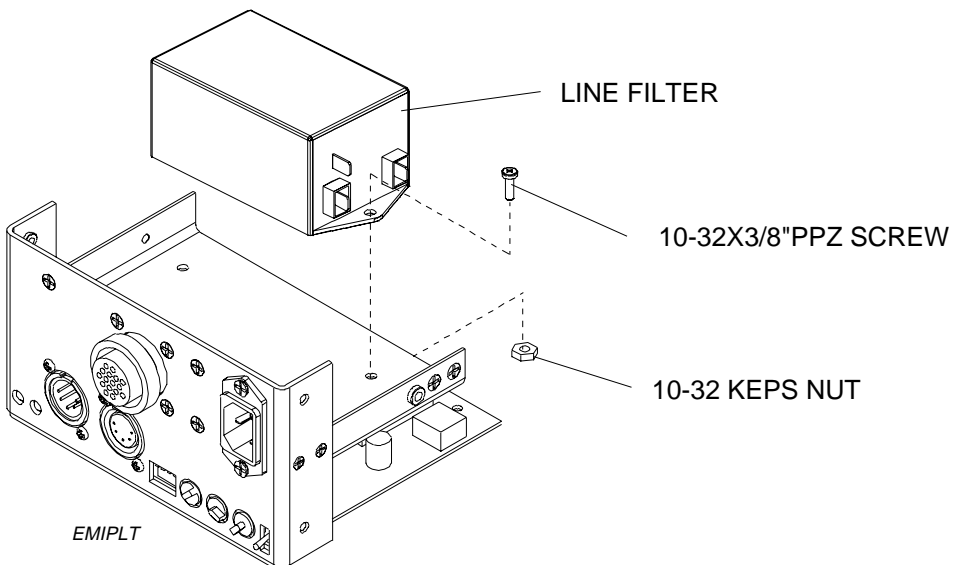
1. EA LINE FILTER, 8A 250VAC (67.4010.0001)

**Tools:**

- Screwdriver, Phillips #2
- Wrenches, 3/8", 7/16"

**To remove the line filter:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Remove front panel assembly. Refer to Front Panel Assembly Removal paragraph.
- Step 4. At line filter, remove the following connectors:
  - a. Three 90 degree flag connectors on LINE side.
  - b. Two 90 degree flag connectors on LOAD side.
- Step 5. Using screwdriver and 7/16" wrench, remove two 10-32 x 3/8" PPZ screws and 10-32 KEPS nuts securing line filter to mounting plate (**Figure 3-8**). Remove line filter.



**Figure 3-8. Line Filter Removal**

### 3.3.9 Control PCB Removal and Replacement

**Parts:**

- 1 EA PCB ASSY, POWER PACK CONTROL (24.9654.0020)
- 2 EA CABLE TIE, SMALL .10 X 4" (55.2186.0001)

**Tools:**

- Screwdriver, Phillips #1
- Screwdriver, Phillips #2
- Wrench, 3/8"
- Wire cutters

**To remove and replace the control PCB:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Remove front panel assembly. Refer to Front Panel Assembly Removal paragraph.
- Step 4. At removed front panel assembly, disconnect five 90 degree flag connectors from line filter.
- Step 5. At right side of mounting plate, use screwdriver and 3/8" wrench to remove two 6-32 x 5/16" PFZ screws and 6-32 KEPS nuts securing two ground wire lugs.
- Step 6. Between line filter and front plate, use wire cutter to remove two cable ties securing wires to cable anchors.
- Step 7. At control PCB, remove MTA wire connectors from headers at J3 ANALOG OUT, J7 S300 I/O, and J2 24V IN.
- Step 8. At front panel, use #1 Phillips to remove four M3 x 5MM PPB metric screws securing DMX connectors to front panel.
- Step 9. At either side of mounting plate, use #1 Phillips to remove two 4-40 x 1/4" PFZ screws securing mounting plate to front panel.
- Step 10. Remove mounting plate assembly.
- Step 11. At control PCB, remove two 6-32 x 7/16" PPZ screws and #6 lock washers securing PCB to front plate.
- Step 12. Remove control PCB.
- Step 13. Replace control PCB assembly using Steps 1 through 12 in reverse.

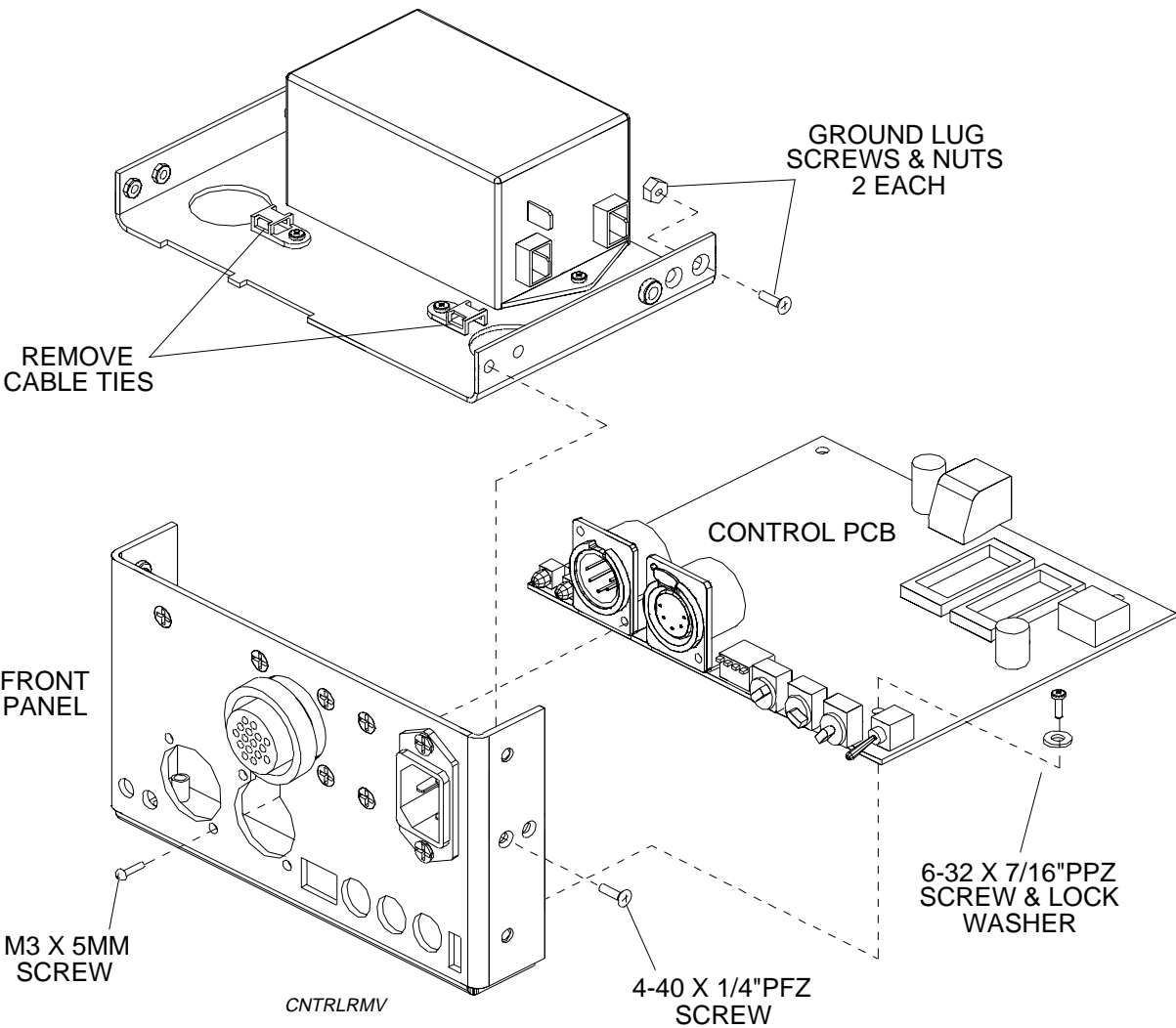


Figure 3-9. Control PCB Removal

### 3.3.10 Lamp Power Supply Cable Assembly Removal and Replacement

#### Parts:

- 1 EA CABLE ASSY, LAMP POWER SUPPLY (25.9654.0028)
- 3 EA CABLE TIE, SMALL .10 X 4" (55.2186.0001)

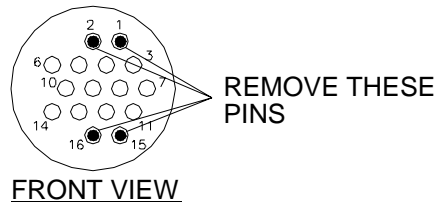
#### Tools:

- Depinning tool
- Screwdriver, Phillips #2
- Wrench, 3/8"
- Wire cutters

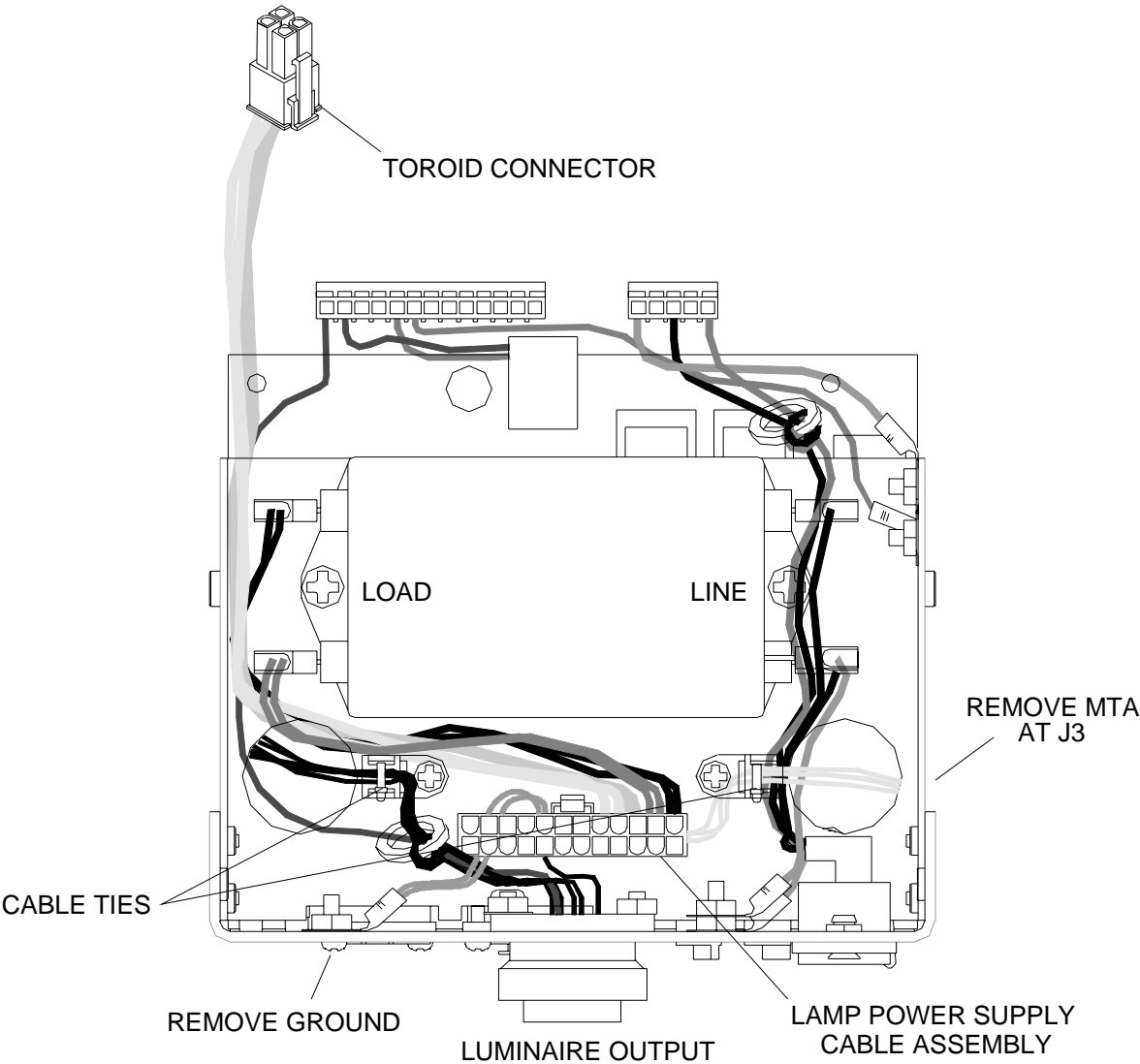
#### To remove and replace the lamp power supply cable assembly:

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Remove front panel assembly. Refer to Front Panel Assembly Removal paragraph.
- Step 4. At line filter mounting plate, use wire cutters to remove two cable ties securing wires to cable anchors (**Figure 3-10**).
- Step 5. At LUMINAIRE OUTPUT connector (on front panel), use depinning tool to remove the following pins from housing:

- a. Pin 1
- b. Pin 2
- c. Pin 15
- d. Pin 16



- Step 6. At control PCB, remove 6-pos connector from header at J3 ANALOG.
- Step 7. At line filter load side, disconnect two 90 degree flag connectors.
- Step 8. At orange and yellow toroid wires, use wire cutters to remove any cable ties securing wires to enclosure.
- Step 9. Disconnect 4-pos toroid wire connector.
- Step 10. At front panel, use screwdriver and 3/8" wrench to remove grounding screw and nylon lock nut.
- Step 11. Remove cable assembly.
- Step 12. Replace cable assembly using Steps 1 through 11 in reverse.



**Figure 3-10. Lamp Power Supply Cable Assembly Removal**



### 3.3.11 AC/Data Out Cable Assembly Removal and Replacement

#### Parts:

- 1 EA CABLE ASSY, AC/DATA OUT (25.9654.0025)
- 1 EA CABLE TIE, SMALL .10 X 4" (55.2186.0001)

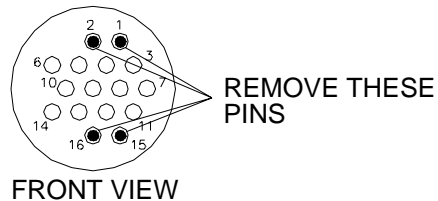
#### Tools:

- Depinning tool
- Screwdriver, Phillips #2
- Wrench, 3/8"
- Wire cutters
- Pliers

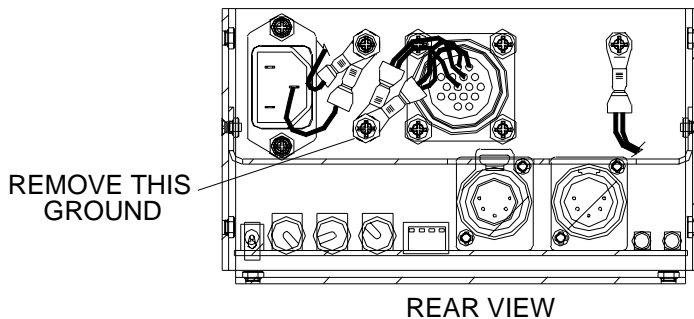
#### To remove and replace the AC/Data out cable assembly:

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Remove front panel assembly. Refer to Front Panel Assembly Removal paragraph.
- Step 4. At control PCB, remove 4-pos MTA connector from header at J7 S300 I/O.
- Step 5. At LUMINAIRE OUTPUT connector (on front panel), use depinning tool to remove the following pins from housing:

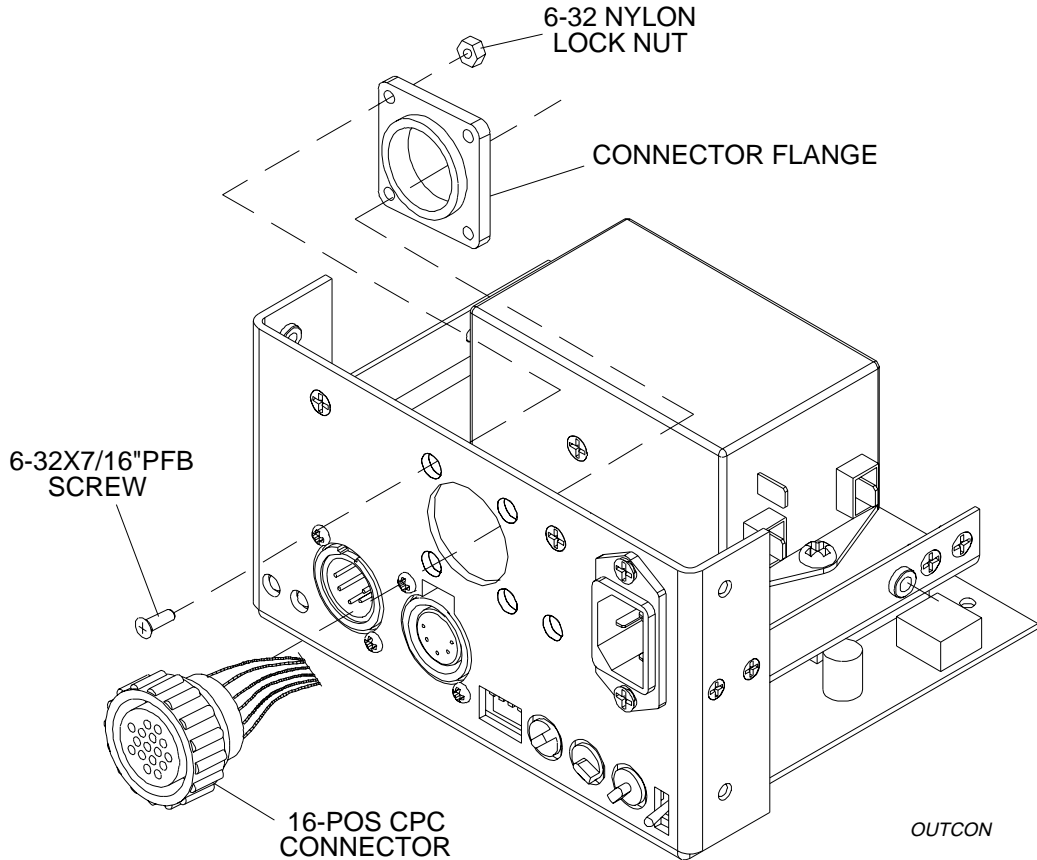
- a. Pin 1
- b. Pin 2
- c. Pin 15
- d. Pin 16



- Step 6. At right side front panel, use screwdriver and 3/8" wrench to remove ground screw and nylon lock nut securing two lower ground ring terminals to front panel.



- Step 7. At front panel LUMINAIRE OUTPUT connector, use screwdriver and 3/8" wrench to remove four 6-32 x 7/16" PFB screws and nylon locking nuts securing connector flange to front panel.
- Step 8. Using pliers, unscrew 16-pos CPC connector from flange and front panel.
- Step 9. Replace AC/Data out cable assembly using Steps 1 through 8 in reverse.



**Figure 3-11. AC/Data Out Cable Assembly Removal**

### 3.3.12 AC In Cable Assembly

**Parts:**

- 1 EA CABLE ASSY, AC IN (25.9654.0026)
- 1 EA CABLE TIE, SMALL .10 X 4" (55.2186.0001)

**Tools:**

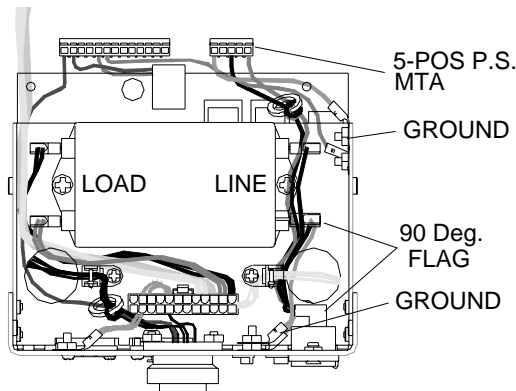
- Screwdriver, Phillips #2
- Wire cutters

**To remove and replace the AC in cable assembly:**

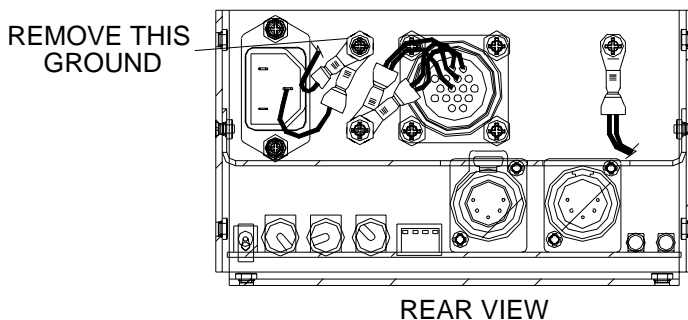
- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Remove front panel assembly. Refer to Front Panel Assembly Removal paragraph.

**Note:** The AC In cable assembly consists of an IEC inlet connector mounted on the front panel. Three 90 degree flag terminals (two white, a green/yellow, and black wires) connect to the back of the IEC inlet. This cable assembly also contains a 5-pos orange MTA connector for power supply AC. Ground wires from the IEC and 5-pos MTA connectors attach to the front panel and line filter mounting plate with screws and nylon lock nuts.

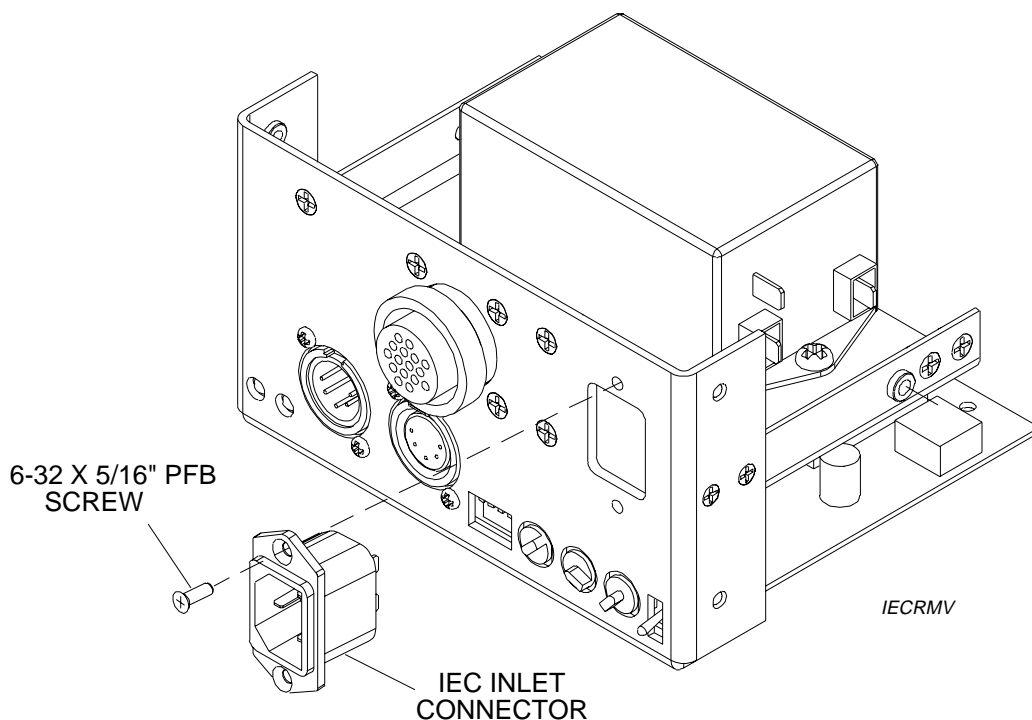
- Step 4. Remove six 90 degree flag connectors.
  - a. At IEC back side, remove three 90 degree flag connectors.
  - b. At line filter LINE side, remove three 90 degree flag connectors.



- Step 5. Remove two ground terminals.
- At top ground screw closest to IEC, use screwdriver and 3/8" wrench to remove 6-32 x 7/16" PFB screw and nylon lock nut securing ground lug.
  - At line filter mounting plate, use screwdriver to remove rear ground lug 6-32 x 5/16" PFZ screw and nylon lock nut.



- Step 6. Remove IEC connector. At front panel, use screwdriver to remove two 6-32 x 5/16" PFB screws securing inlet connector to front panel.
- Step 7. Install new AC in cable assembly using Steps 1 through 6 in reverse.



**Figure 3-12. IEC connector Removal**

### 3.3.13 LVS DC Out Cable Assembly Removal and Replacement

**Parts:**

- 1 EA CABLE ASSY, LVS DC OUT (25.9654.0027)
- 1 EA CABLE TIE, SMALL .10 X 4" (55.2186.0001)

**Tools:**

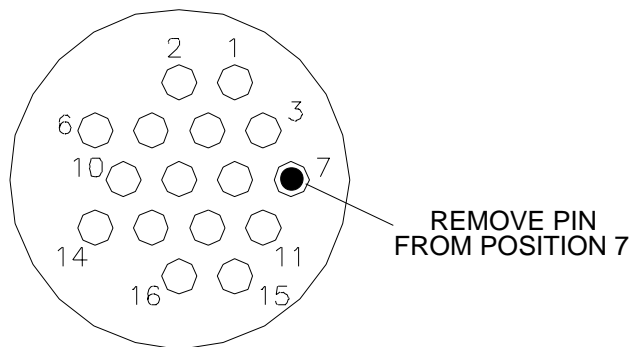
- Depinning tool
- Screwdriver, Phillips #2
- Wrench, 3/8"
- Wire cutters

**To remove and replace the LVS DC out cable assembly:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Remove front panel assembly. Refer to Front Panel Assembly Removal paragraph.

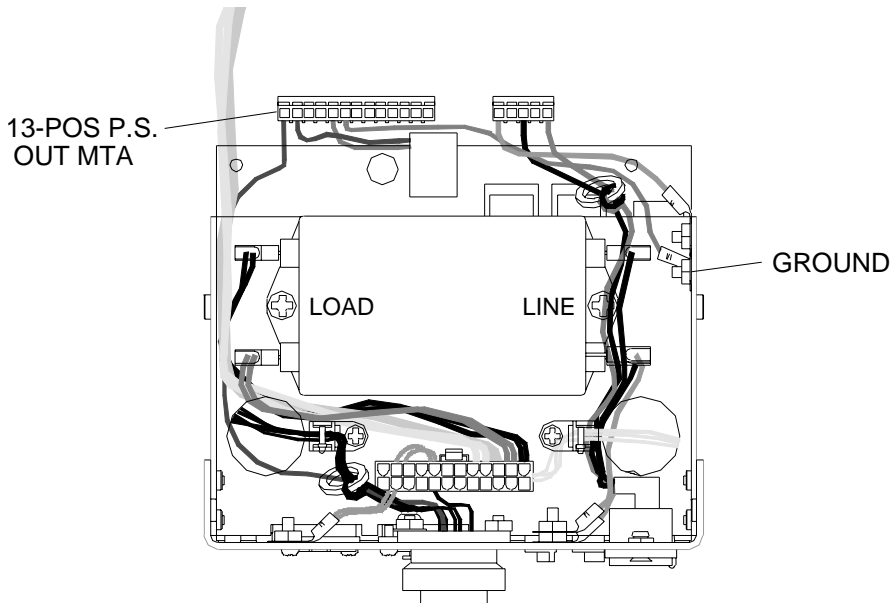
**Note:** The LVS DC out cable assembly consists of a 13-pos MTA connector that connects to the power supply out header. DC is routed to the control PCB and to the LUMINAIRE OUTPUT CPC connector. A ground is connected to the line filter mounting plate.

- Step 4. At front panel LUMINAIRE OUTPUT CPC connector, use depinning tool to remove wire from position 7.



FRONT VIEW

- Step 5. At control PCB, remove 3-pos MTA connector from header at J2 24V IN.
- Step 6. At line filter mounting plate, use screwdriver and 3/8" wrench to remove 6-32 x 5/16" PFB screw and nylon lock nut securing appropriate ground terminal.
- Step 7. Install new DC Out cable assembly using Steps 1 through 6 in reverse.



**Figure 3-13. DC Out Cable Assembly Identification**

### 3.3.14 Line Filter Ground Cable Assembly Removal and Replacement

**Parts:**

- 1 EA CABLE ASSY, LINE FILTER GND (25.9654.0029)
- 1 EA CABLE TIE, SMALL .10 X 4" (55.2186.0001)

**Tools:**

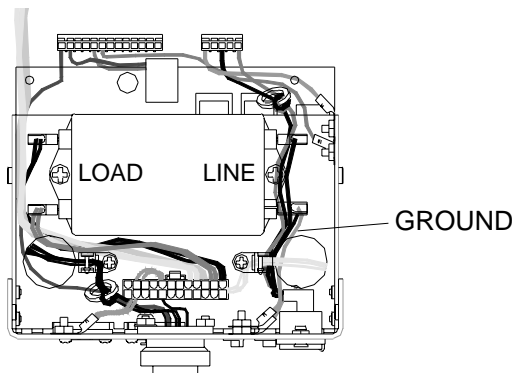
- Screwdriver, Phillips #2
- Wrench, 3/8"
- Wire cutters

**To remove and replace the line filter ground cable assembly:**

- Step 1. Remove **C3/APS6** module. Refer to **C3/APS6** Module Removal and Replacement paragraph.
- Step 2. Remove power supply. Refer to Power Supply Removal and Replacement paragraph.
- Step 3. Remove front panel assembly. Refer to Front Panel Assembly Removal paragraph.

**Note:** The line filter ground cable consists of a green/yellow wire, 90 degree flag terminal, and a #6 ring terminal. The flag terminal connects to the LINE side of the line filter. The ring terminal connects the front panel with a screw and nylon lock nut.

- Step 4. At LINE side of line filter, remove ground terminal (green/yellow wire).
- Step 5. At front panel, use screwdriver and 3/8" wrench to remove 6-32 x 5/16" PFB screw and nylon nut securing appropriate ground ring terminal. Remove ground wire.
- Step 6. Install new line filter ground cable using Step 1 through 5 in reverse.



**Figure 3-14. Line Filter Ground Cable Assembly Removal**

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## Chapter 4. Illustrated Parts Breakdown

This chapter contains a complete illustrated parts breakdown for the DMX power pack. All parts are identified by their Vari-Lite part number and name for the purpose of identification and ordering. This chapter is divided into the following sections:

4.1 Drawing Tree: DMX Power Pack

4.2 Illustrated Parts

---

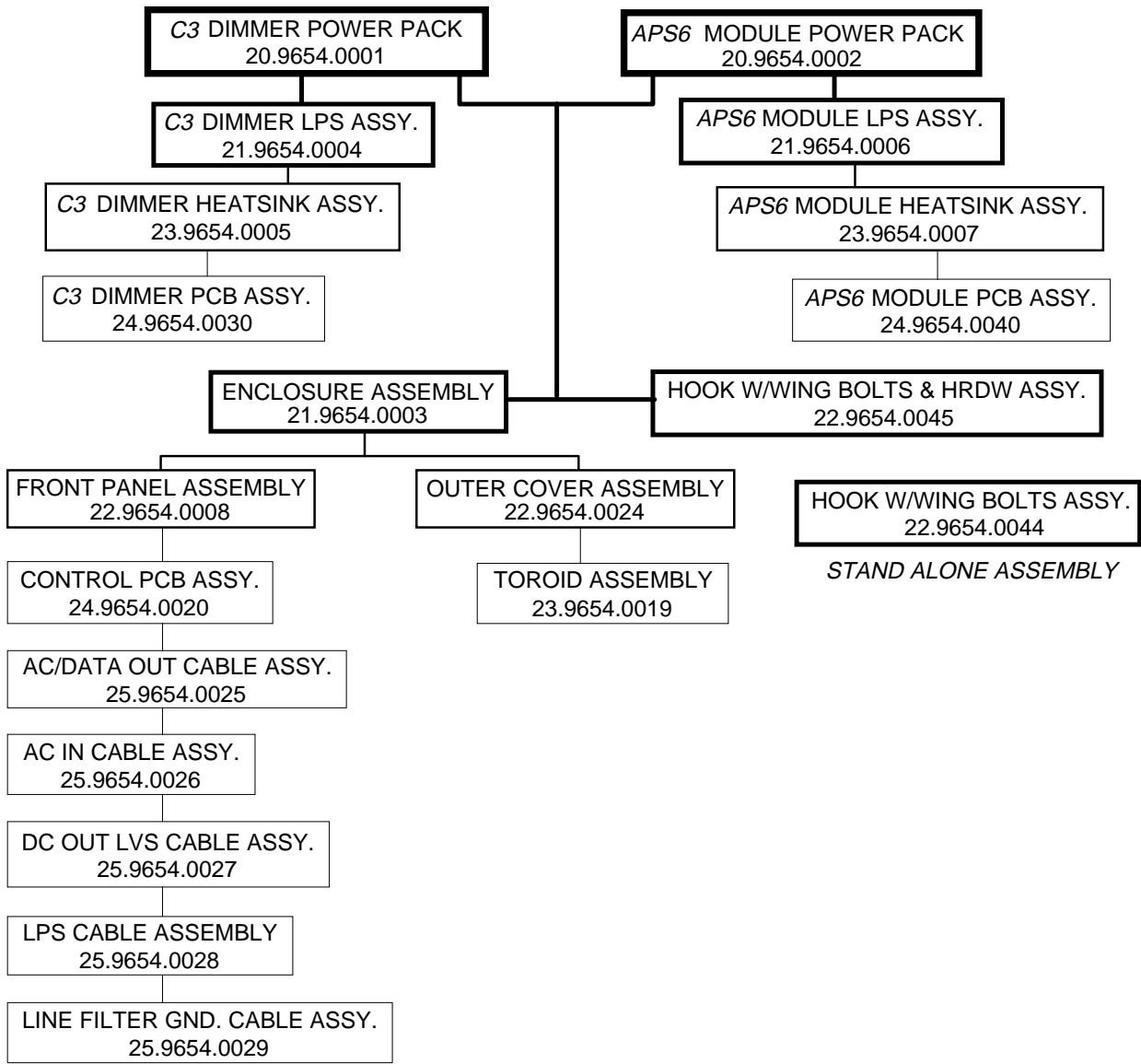
**Note:** All parts for each sub-assembly are listed in part number order. Parts are identified on the corresponding illustration by item numbers. If a part is used multiple times in different places, the quantity is noted next to the illustration item number.

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4.1 Drawing Tree

4.1.1 C3/APS6 DMX Power Pack  
(20.9654.001 & 20.9654.002)



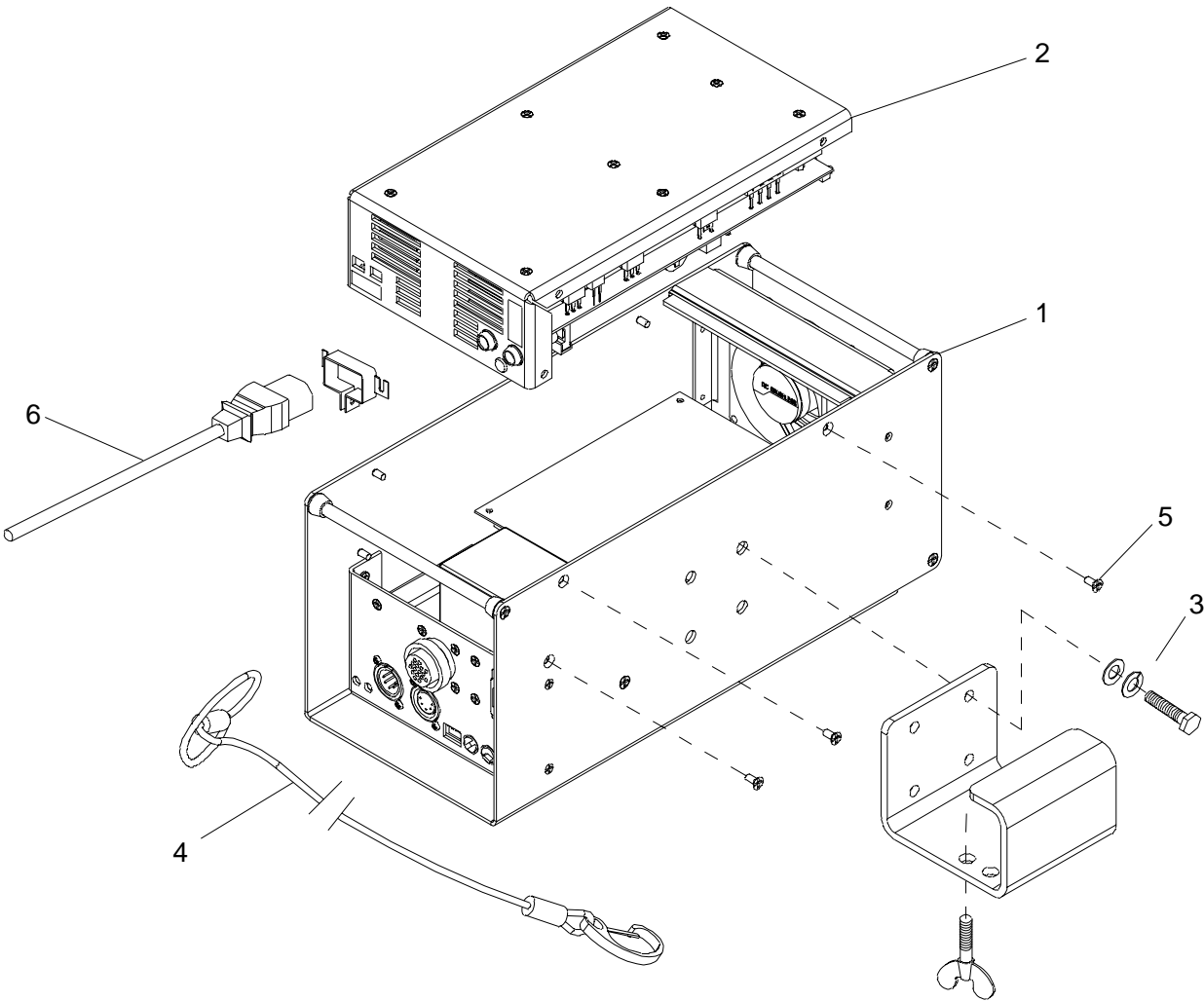
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4.2 Parts Breakdown

4.2.1 DMX Power Pack, C3 Assembly Version  
20.9654.0001

NO.	PART NO.	QTY	DESCRIPTION
1	21.9654.0003	1 EA	ASSY, POWER PACK ENCLOSURE
2	21.9654.0004	1 EA	ASSY, LPS PLATE PP C3 DIMMER
3	22.9654.0045	1 EA	ASSY, HOOK W/WING BOLTS & HRDW
4	22.9620.0194	1 EA	ASSY, LAMP SAFETY CABLE
5	55.5636.0375	6 EA	SCREW, 8-32 X 3/8"PFSS BLK
6*	25.9654.0041	1 EA	CABLE ASSY, CORDSET, 220V, W/CONN. LOCK
6*	25.9654.0042	1 EA	CABLE ASSY, CORDSET, 110V, W/CONN. LOCK

\* - Refer to Chapter 2 for power cable configurations.

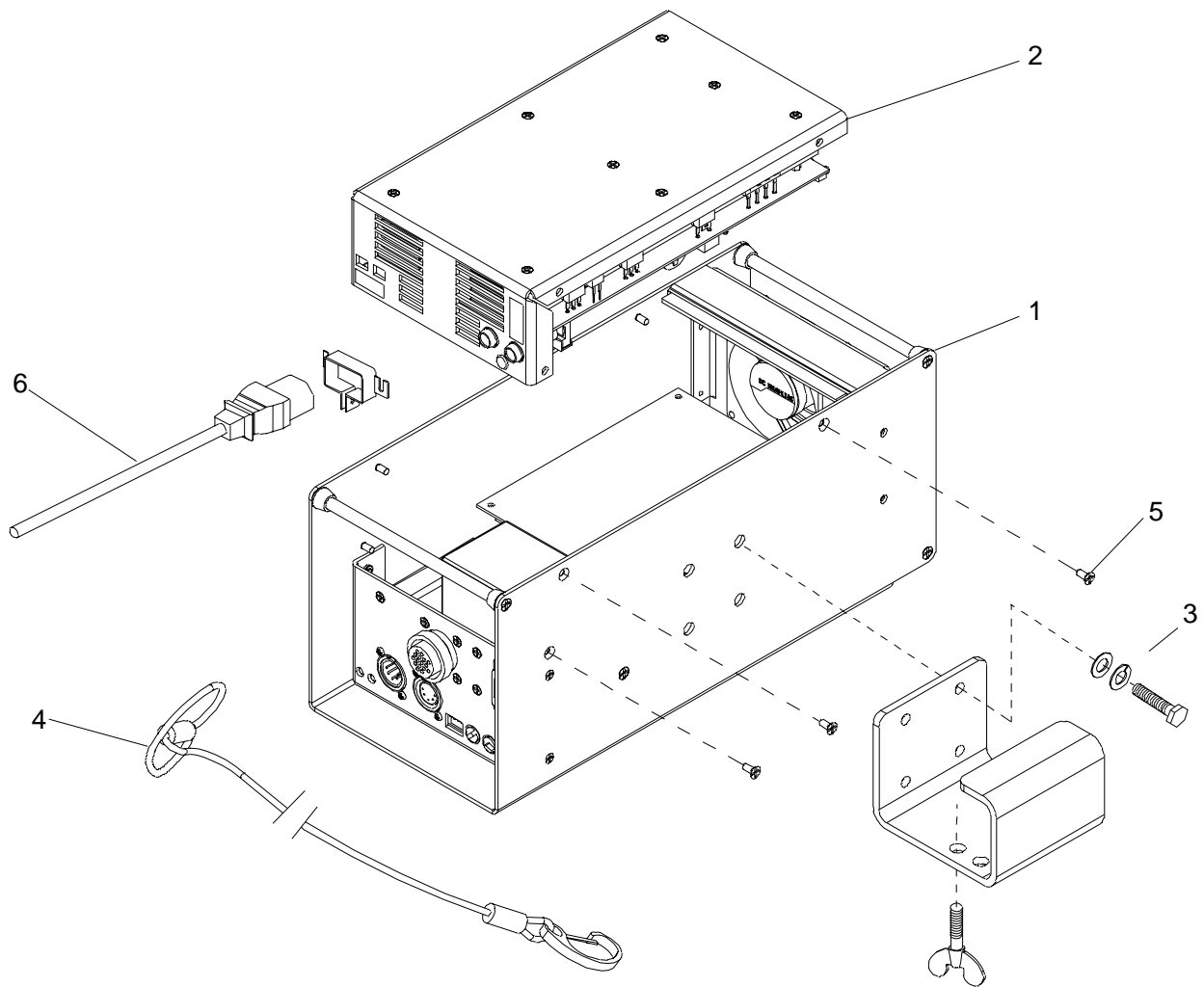


4.2.2

DMX Power Pack, *APS6* Assembly Version  
20.9654.0002

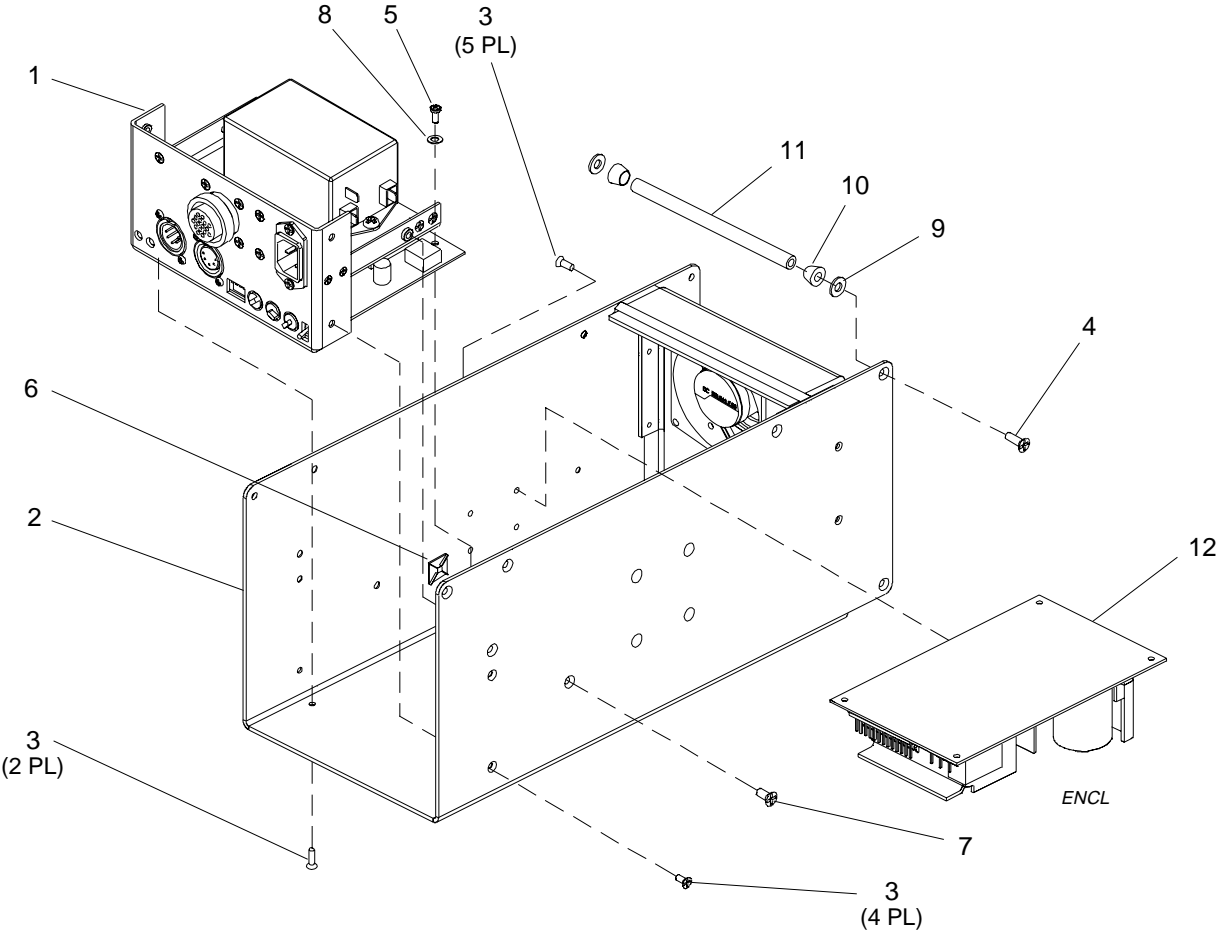
NO.	PART NO.	QTY	DESCRIPTION
1	21.9654.0003	1 EA	ASSY, POWER PACK ENCLOSURE
2	21.9654.0006	1 EA	ASSY, LPS PLATE PP APS6
3	22.9654.0045	1 EA	ASSY, HOOK W/WING BOLTS & HRDW
4	22.9620.0194	1 EA	ASSY, LAMP SAFETY CABLE
5	55.5636.0375	6 EA	SCREW, 8-32 X 3/8"PFSS BLK
6*	25.9654.0041	1 EA	CABLE ASSY, CORDSET, 220V, W/CONN. LOCK
6*	25.9654.0042	1 EA	CABLE ASSY, CORDSET, 110V, W/CONN. LOCK

\* - Refer to Chapter 2 for power cable configurations.



4.2.3 Enclosure Assembly  
21.9654.0003

NO.	PART NO.	QTY	DESCRIPTION
1	22.9654.0008	1 EA	ASSY, FRONT PANEL - POWER PACK
2	22.9654.0024	1 EA	ASSY, OUTER COVER - POWER PACK
3	53.5636.0312	11 EA	SCREW, 6-32 X 5/16"PFSS BLK
4	53.5638.0500	6 EA	SCREW, 8-32 X 1/2"PFSS BLK
5	53.6610.0003	2 EA	SCREW, 6-32 X 7/16"PPZ
6	55.2186.0001	2 EA	CABLE TIE, SMALL, .10 X 4"
7	55.5636.0375	2 EA	SCREW, 8-32 X 3/8"PFSS BLK
8	55.6538.0001	2 EA	WASHER, LOCK, #6 INTERNAL TOOTH
9	55.6637.0001	6 EA	WASHER, .178ID .562OD BLACK .030 THK
10	55.6704.0002	6 EA	FERRULE, BLACK
11	55.6704.0009	3 EA	STANDOFF, 5/16" RND 8-32 X 6-1/8"LG
12	69.3121.0001	1 EA	POWER SUPPLY, 110W -140W +24VDC



4.2.4

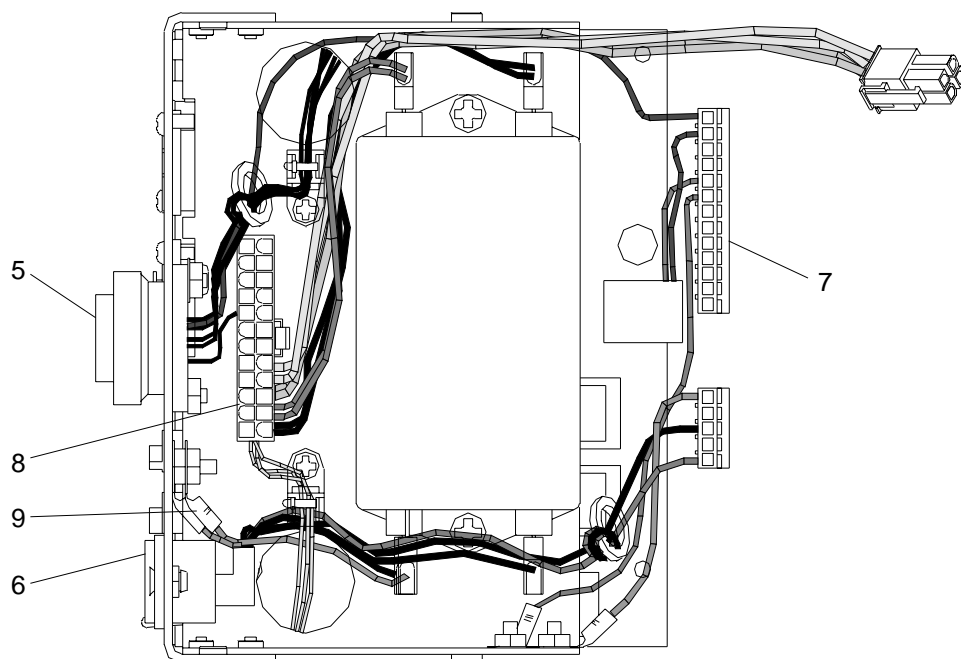
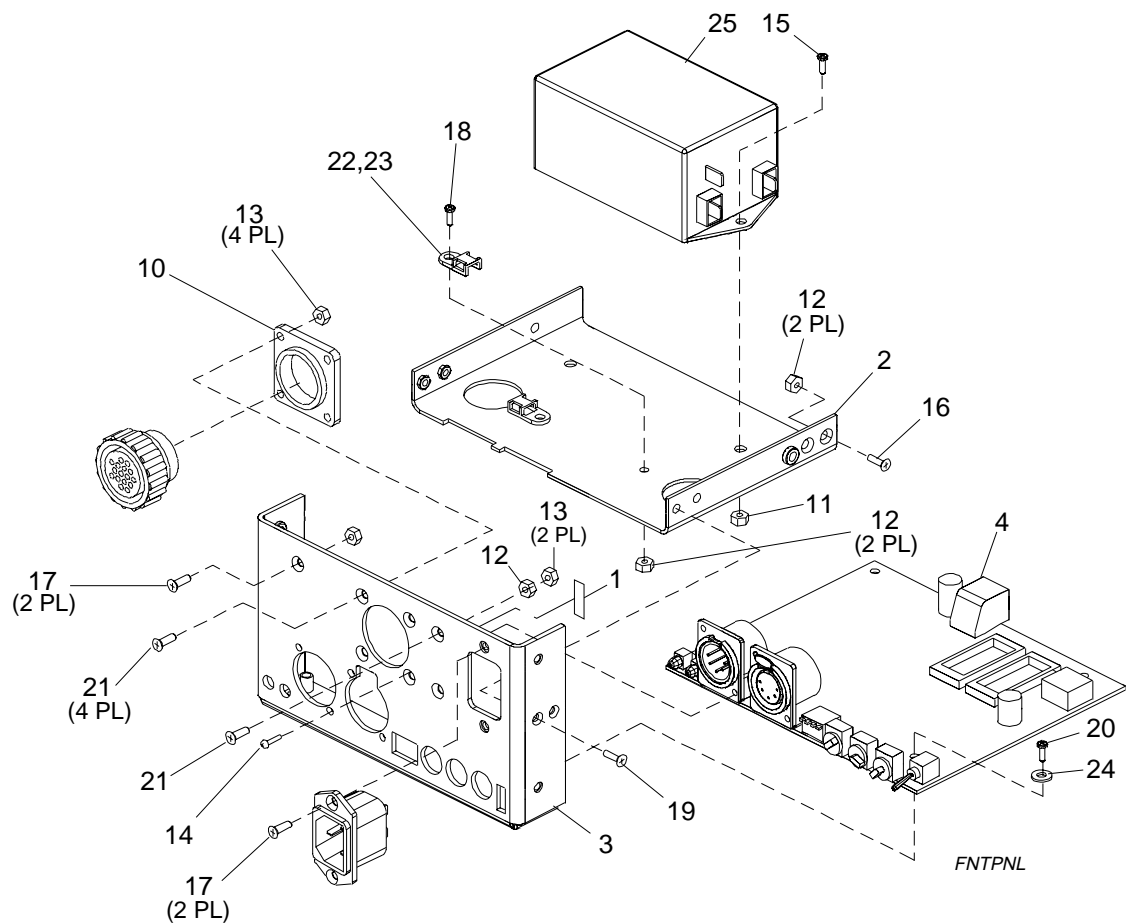
Front Panel Assembly

22.9654.0008

NO.	PART NO.	QTY	DESCRIPTION
1	04.9640.0374	1 EA	LABEL, P.E. GROUND
2	10.9654.0012	1 EA	PLATE, MOUNTING EMI - POWER PACK
3	10.9654.0015	1 EA	PANEL, FRONT - POWER PACK
4	24.9654.0020	1 EA	PCB ASSY, POWER PACK CONTROL
5	25.9654.0025	1 EA	CABLE ASSY, AC DATA OUT - POWER PACK
6	25.9654.0026	1 EA	CABLE ASSY, AC IN - POWER PACK
7	25.9654.0027	1 EA	CABLE ASSY, LVS DC OUT - POWER PACK
8	25.9654.0028	1 EA	CABEL ASSY, LAMP POWER SUPPLY
9	25.9654.0029	1 EA	CABLE ASSY, LINE FILTER GROUND
10	52.6400.0016	1 EA	FLANGE, CPC 17, PANEL-MT
11	53.2001.0001	2 EA	NUT, 10-32, KEPS ZINC PLATED
12	53.2002.0001	5 EA	NUT, 6-32 KEPS ZINC PLATED
13	53.2202.0006	7 EA	NUT, 6-32 HEX SS NYLON INSERT
14	53.6513.0019	4 EA	SCREW, M3 X 5MM PPB METRIC
15	53.6517.0001	2 EA	SCREW, 10-32 X 3/8"PPZ
16	53.6525.0002	2 EA	SCREW, 6-32 X 5/16"PFZ
17	53.6542.0001	4 EA	SCREW, 6-32 X 5/16"PFB
18	53.6558.0001	2 EA	SCREW, 6-32 X 3/8"PPZ
19	53.6559.0001	4 EA	SCREW, 4-40 X 1/4"PFZ
20	53.6610.0003	2 EA	SCREW, 6-32 X 7/16"PPZ
21	53.6610.0004	5 EA	SCREW, 6-32 X 7/16"PFB
22	55.2179.0001	2 EA	CABLE ANCHOR MOUNT, #6 SCREW MNT
23	55.2186.0001	6 EA	CABLE TIE, SMALL .10 X 4"
24	55.6538.0001	2 EA	WASHER, LOCK #6 INTERNAL TOOTH
25	67.4010.0001	1 EA	LINE FILTER, 8A 250VAC



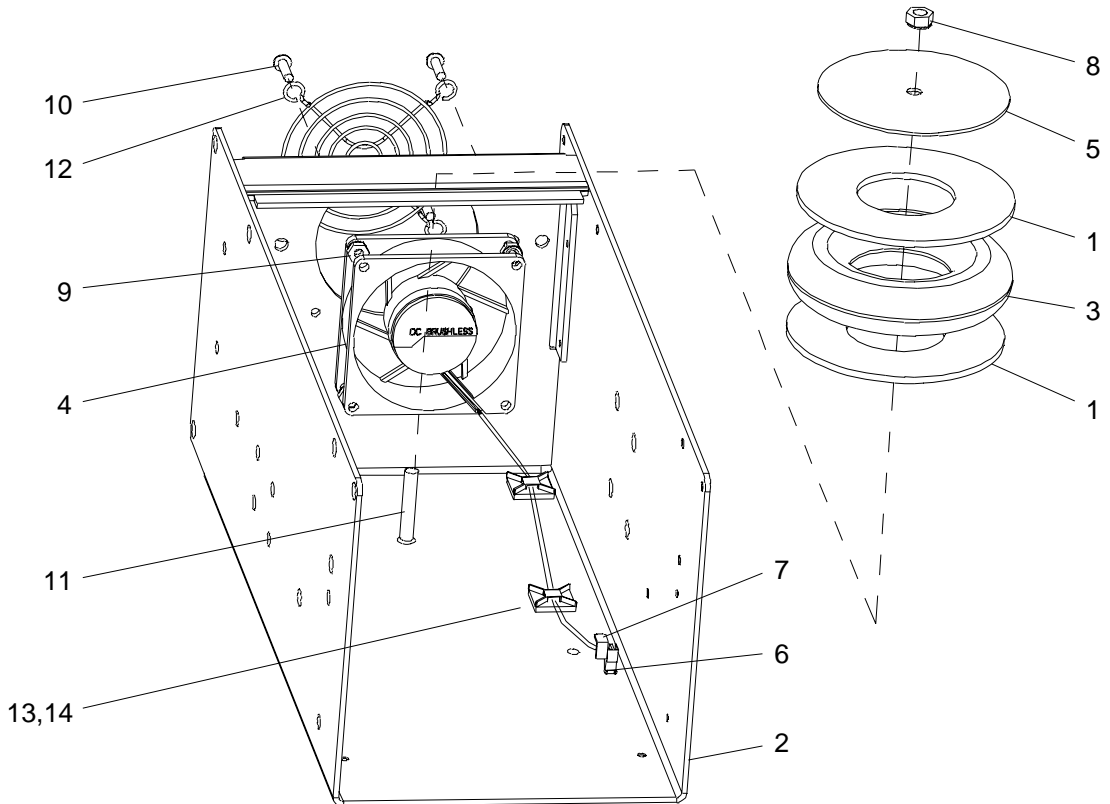
Front Panel Assembly (Continued)



TOP VIEW

#### 4.2.5 Outer Cover Assembly 22.9654.0024

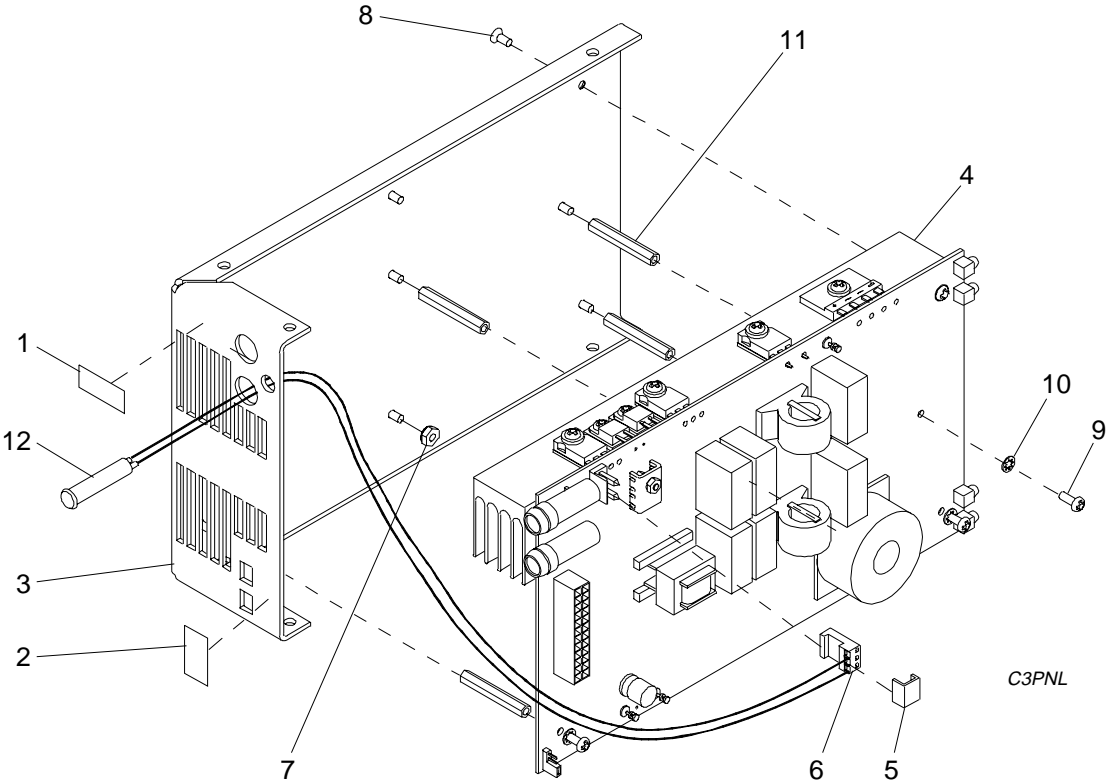
NO.	PART NO.	QTY	DESCRIPTION
1	10.9640.0002	2 EA	PAD, CHOKE
2	10.9654.0011	1 EA	COVER, OUTER - POWER PACK
3	23.9654.0019	1 EA	ASSY, TOROID APS/C3 PP
4	40.7113.0001	1 EA	FAN, +24V 80X80X25MM 32CFM
5	46.6004.0001	1 EA	MOUNTING DISC, METAL 90MM DIA
6	52.6396.2602	1 EA	RECEPT, MTA100, W/TAB, BLU, 2POS, 26AWG
7	52.6424.0002	1 EA	COVER, STRAIN RELIEF 2POS MTA
8	53.2018.0250	1 EA	NUT, 1/4-20 KEPS SS
9	53.2200.0008	4 EA	NUT, 8-32 KEPS SS
10	53.5508.0563	4 EA	SCREW, 8-32 X 9/16"PPSS BLK
11	53.6653.1500	1 EA	SCREW, 1/4-20 X 1-1/2" PFB
12	55.0005.0001	1 EA	GRILL, FAN 80MM BLACK WIRE FM
13	55.2179.0003	4 EA	SADDLE, CABLE, ADHESIVE BACKED
14	55.2186.0001	2 EA	CABLE TIE, SMALL, .10 X 4"



4.2.6 C3 Dimmer LPS Plate Assembly  
21.9654.0004

NO.	PART NO.	QTY	DESCRIPTION
1	04.9654.0035	1 EA	LABEL, POWER PACK C3 MODULE
2	04.9654.0037	1 EA	LABEL, POWER PACK C3 DIMMER JUMPER
3	10.9654.0010	1 EA	PANEL, LAMP POWER SUPPLY
4	23.9654.0005	1 EA	ASSEMBLY, HEATSINK PP C3 DIMMER
5	52.6436.0003	1 EA	COVER, STRAIN RELIEF, MTA156, 3POS
6	52.6442.2203	1 EA	RECEPT, MTA156 W/TAB RED 3POS
7	53.2002.0001	1 EA	NUT, 6-32 KEPS ZINC PLATED
8	53.5636.0312	8 EA	SCREW, 6-32 X 5/16"PFSS BLK
9	53.6558.0001	4 EA	SCREW, 6-32 X 3/8"PPZ
10	55.6538.0001	4 EA	WASHER, LOCK, #6 INTERNAL TOOTH
11	55.6583.1500	4 EA	STANDOFF, 1/4" HEX 6/32 X 1-1/2"LG FEM ALUM
12	71.2506.0003	1 EA	LIGHT, NEON INDICATOR, AMBER/BLK (VLSR)

**Note:** For 12.5 Amp fuses see:  
24.9654.0030 C3 DIMMER PCB ASSEMBLY,  
24.9654.0040 APS6 MODULE PCB ASSEMBLY.



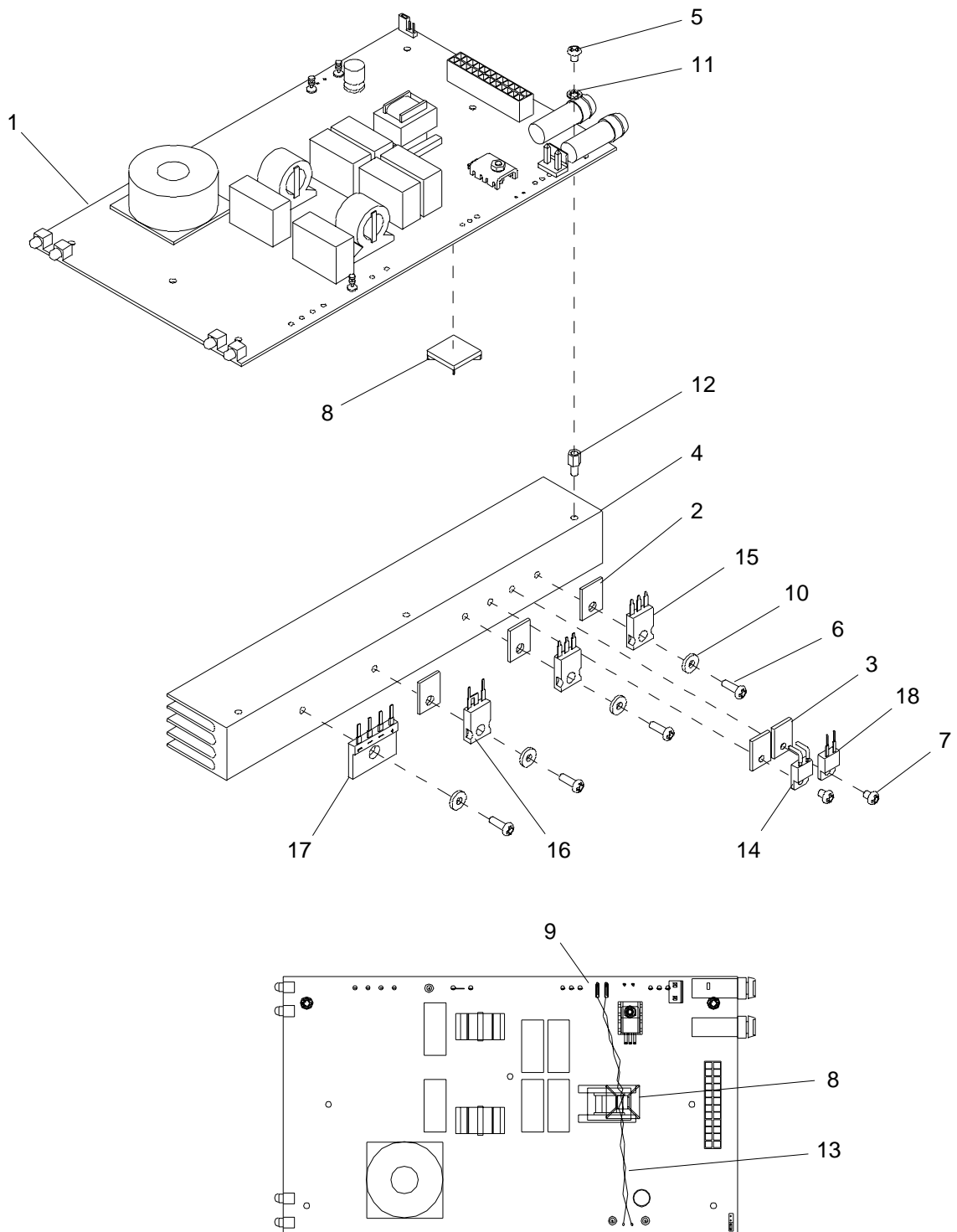
4.2.7

C3 Dimmer Heatsink Assembly

23.9654.0005

NO.	PART NO.	QTY	DESCRIPTION
1	24.9654.0030	1 EA	PCB ASSY, POWER PACK C3 DIMMER
2	51.5006.0002	3 EA	INSULATOR, TO-247, 53-020103AC
3	51.5006.0005	2 EA	INSULATOR, TO-220 ALUMINUM OXIDE
4	10.9654.0018	1 EA	HEATSINK, POWER PACK
5	53.6522.0001	2 EA	SCREW, 6-32 X 1/4"PPZ
6	53.6610.0003	4 EA	SCREW, 6-32 X 7/16"PPZ
7	53.6613.0250	2 EA	SCREW, 6-32 X 1/4"PPN NYLON
8	55.2179.0003	1 EA	SADDLE, CABLE, DHESIVE BACKED
9	55.2199.0001	1 IN	HEAT SHRINK, 1/16" BLACK
10	55.6517.0001	4 EA	WASHER, FLAT STL .375OD X .150ID X .031THK
11	55.6538.0001	2 EA	WASHER, LOCK, #6 INTERNAL TOOTH
12	55.6583.0250	2 EA	STANDOFF, 1/4"HEX 6-32 X 1/4"LG MF ALUM
13	73.2026.0010	12.5 IN	WIRE, 26 AWG SOLID BLK TEFLON
14	74.1006.0004	1 EA	SWITCH, THERMAL 100* PCB MOUNT
15	80.2616.5025	2 EA	TRANSISTER, POWER MOSFET, 5025, 500V, 23A
16	82.4303.2560	1 EA	DIODE, RECTIFIER, HEXFRED, 2560, 600V, 25A
17	82.4305.0001	1 EA	BRIDGE RECTIFIER, 15A 600V HI TEMP
18	82.4305.1550	1 EA	DIODE, ULTRAFast, MUR1550 600V 15A

C3 Dimmer Heatsink Assembly (Continued)

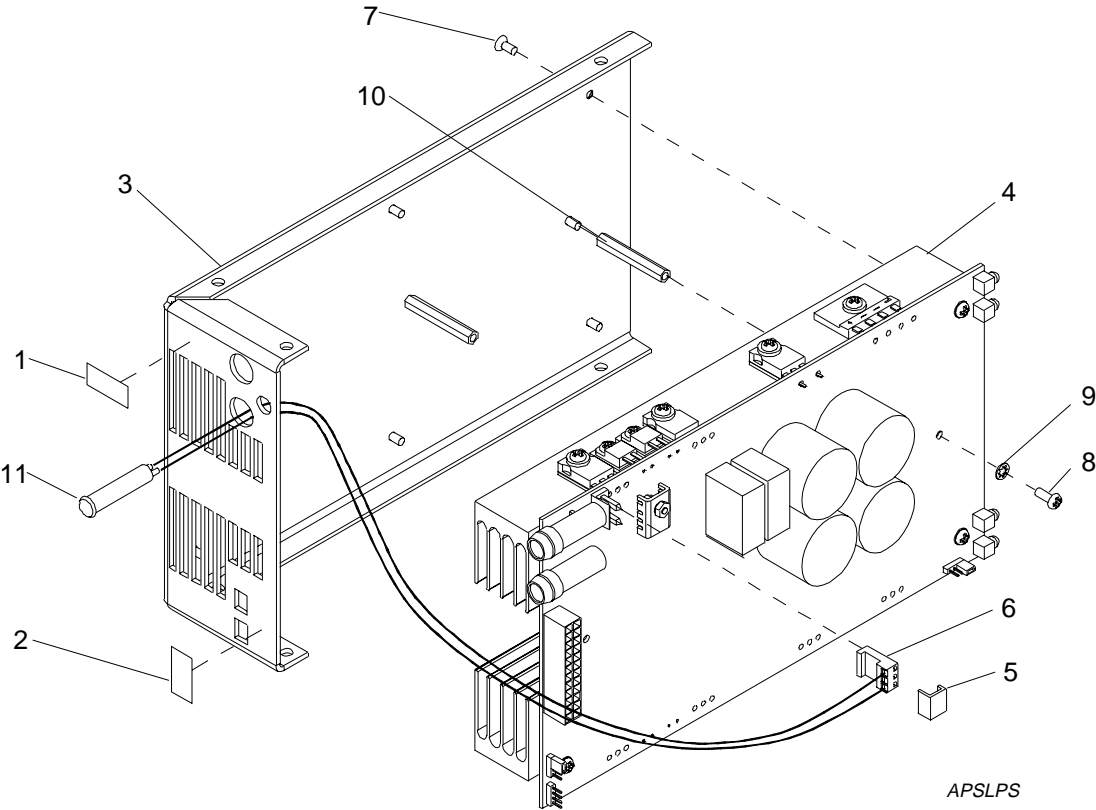


4.2.8

APS6 Module LPS Plate Assembly

21.9654.0006

NO.	PART NO.	QTY	DESCRIPTION
1	04.9654.0034	1 EA	LABEL, P P APS6 MODULE
2	04.9654.0036	1 EA	LABEL, P P JACK APS6 MODULE JUMPER
3	10.9654.0010	1 EA	PANEL, LAMP POWER SUPPLY
4	23.9654.0007	1 EA	ASSY, HEATSINK PP APS6 MODULE
5	52.6436.0003	1 EA	COVER, STRAIN RELIEF, MTA156, 3POS.
6	52.6442.2203	1 EA	RECEPT, MTA156 W/TAB RED 3POS.
7	53.5636.0312	8 EA	SCREW, 6-32 X 5/16" PFSS BLK
8	53.6558.0001	2 EA	SCREW, 6-32 X 3/8" PPZ
9	55.6538.0001	2 EA	WASHER, LOCK, #6 INTERNAL TOOTH
10	55.6583.1500	2 EA	STANDOFF, 1/4"HEX 6-32 X 1-1/2"LG FEM ALUM
11	71.2506.0003	1 EA	LIGHT, NEON INDICATOR, AMBER/BLK (VLSR)



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4.2.9

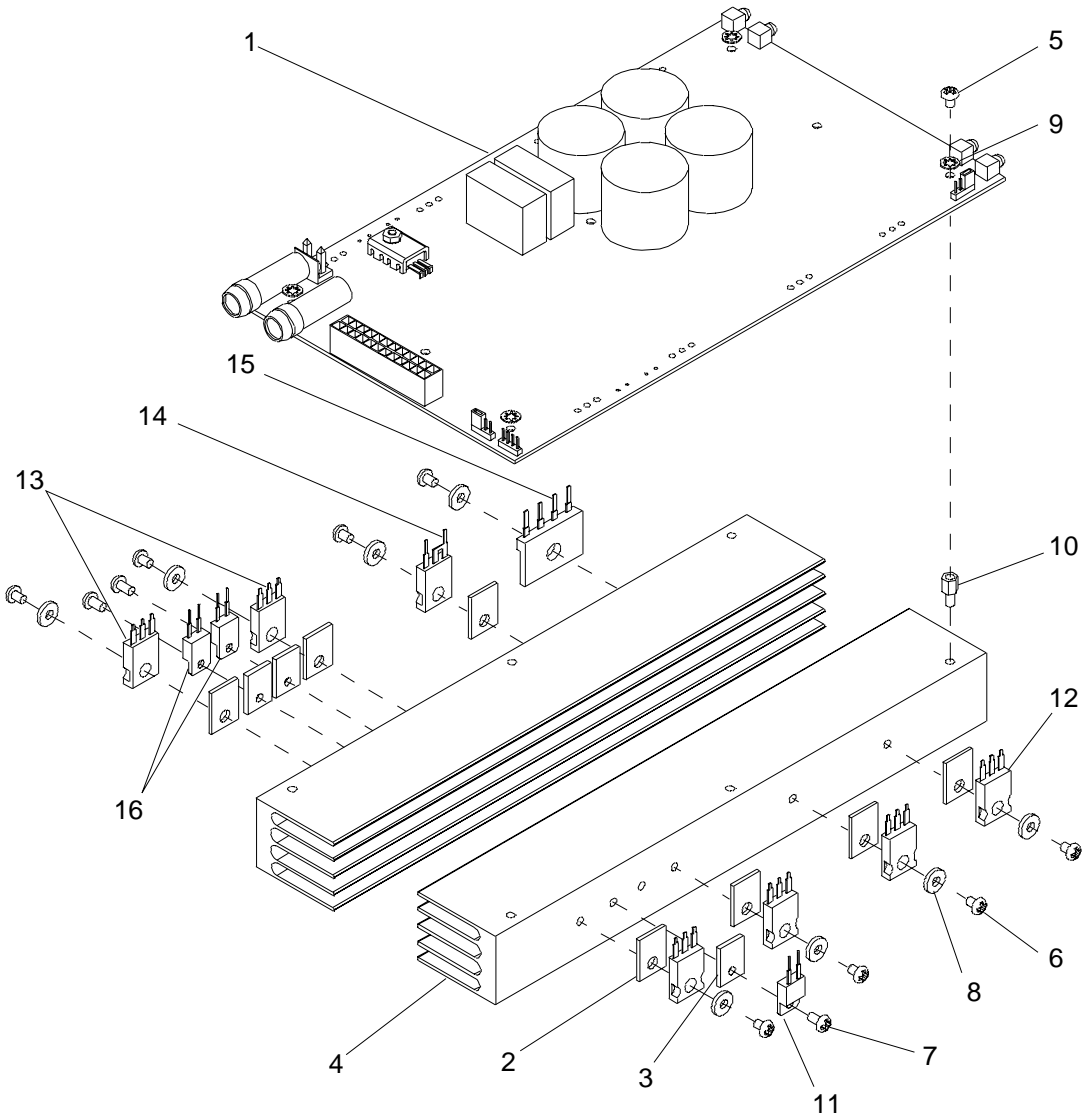
APS6 Module Heatsink Assembly

23.9654.0007

NO.	PART NO.	QTY	DESCRIPTION
1	24.9654.0040	1 EA	PCB ASSY, POWER PACK APS6
2	51.5006.0002	7 EA	INSULATOR, TO-247, 53-020103AC
3	51.5006.0005	3 EA	INSULATOR, TO-220 ALUMINUM OXIDE
4	10.9654.0018	2 EA	HEATSINK, POWER PACK
5	53.6522.0001	4 EA	SCREW, 6-32 X 1/4"PPZ
6	53.6610.0003	8 EA	SCREW, 6-32 X 7/17"PPZ
7	53.6613.0250	3 EA	SCREW, 6-32 X 1/4"PPN NYLON
8	55.6517.0001	8 EA	WASHER, FLAT STL .375OD X .150ID X .031THK
9	55.6538.0001	4 EA	WASHER, LOCK, #6 INTERNAL TOOTH
10	55.6583.0250	4 EA	STANDOFF, 1/4"HEX 6-32 X 1/4"LG MF ALUM
11	74.1006.0004	1 EA	SWITCH, THERMAL 100* PCB MOUNT
12	80.2616.0001	4 EA	TRANSISTER, IGBT IXGH38N60OU1, 600V, 70A
13	80.2616.5025	2 EA	TRANSISTER, POWER MOSFET, 5025, 500V, 23A
14	82.4303.2560	1 EA	DIODE, RECIFIER, HEXFRED, 2560, 600V, 25A
15	82.4305.0001	1 EA	BRIDGE RECTIFIER, 15A 600V HI TEMP
16	82.4305.1550	2 EA	DIODE, ULTRAFast, MUR1550 600V 15A



## APS6 Module Heatsink Assembly (Continued)



4.2.10

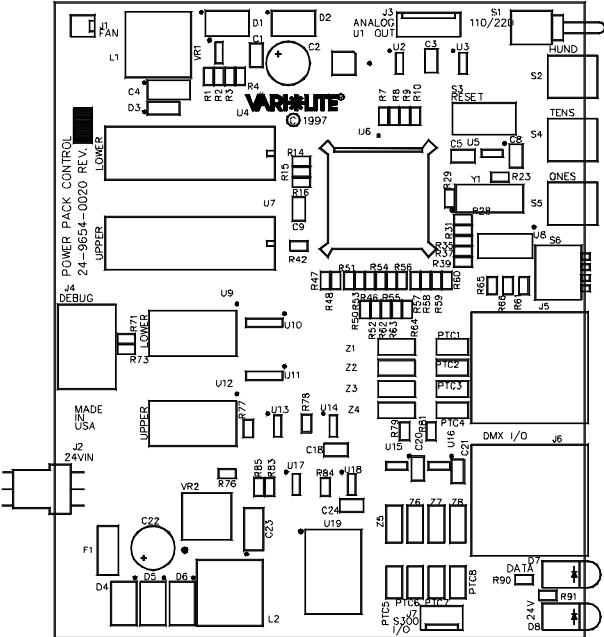
Control PCB Assembly

24.9654.0020

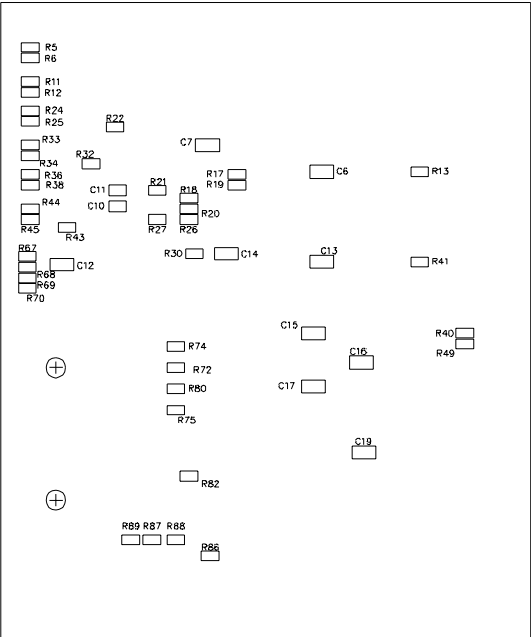
PART NO.	QTY	REF. DES.	DESCRIPTION
11.9654.0020	1 EA		PCB, POWER PACK CONTROL
28.9654.0020	1 EA		COMPONENT KIT, POWER PACK CONTROL
50.2732.0001	2 EA	U9,U12	SOCKET, 32PIN DIP
52.6240.0001	1 EA	J3	HEADER, MTA FRCT LOK STRT POST 6 PIN
52.6284.0001	1 EA	J7	HEADER, MTA FRCT LOK STRT POST 4 PIN
52.6297.0001	1 EA	J1	HEADER, MTA FRCT LOK STRT POST 2 PIN
52.6480.0001	1 EA	J5	CONN, XLR 5 PIN RT ANGLE PCB FEMALE
52.6481.0001	1 EA	J6	CONN, XLR 5 PIN RT ANGLE PCB MALE
52.6488.0003	1 EA	J2	HEADER, 3 POS MTA156 RT ANG POL-LOK
53.6597.0001	2 EA	J6,J5	SCREW, 4-40 X 3/16" PPZ
60.4500.3302	3 EA	R53, R84, R90	RES, 1/10W 5% 330 OHM CHIP SURFACE MOUNT
60.9460.1002	2 EA	R67, R82	RES, .1W 5% 100 OHM CHIP THICK FILM SMT0805
60.9460.1003	15 EA	R5,6,11,24,25,30,33,36,38,43,45,61	RES, .1W 5% 1K CHIP THICK FILM SMT0805
60.9460.1004	63 EA	R7-10,13-23,31,32,35,37,39-42,46-52,54-60,62-66,68-76,78-81,83,86-89	RES, .1W 5% 10K 100V CHIP THICK FILM
60.9460.2203	1 EA	R91	RES, .1W 5% 2.20K 100V CHIP THICK FILM
60.9460.4704	2 EA	R3,R4	RES, .1W 5% 47K CHIP THICK FILM SMT0805
60.9460.5102	2 EA	R77,R85	RES, .1W 5% 510 OHM 100V CHIP THICK FILM
60.9460.7505	1 EA	R29	RES, .1W 5% 750K 100V CHIP THICK FILM
60.9461.1003	1 EA	R2	RES, .1W 1% 1K CHIP THICK FILM SMT0805
60.9461.1134	1 EA	R1	RES, .1W 1% 11.3K CHIP THICK FILM SMT0805
62.2104.0826	2 EA	C2,C22	CAP, 82UF 50V 20% RADIAL
62.4000.0200	2 EA	C10,C11	CAP, 20PF 50V 5% CER CHIP SUR MNT EIA0805
62.4002.0104	18 EA	C1,3,5-9,12-21,24	CAP, .1UF 50V 10% CER CHIP SUR MNT EIA1206
62.4205.0107	1 EA	C23	CAP, 100UF 10V 20% SUR MNT
62.4205.0226	1 EA	C4	CAP, 22UF 25V 10% SUR MNT
63.2032.0001	8 EA	PTC1-PTC8	VARISTOR, PTC 250V 145Ma RADIAL TR250
64.4016.0506	1 EA	Y1	CRYSTAL, 16MHZ SUR MNT
68.4525.0009	2 EA	L1,L2	INDUCTOR, 100uH PE53829 SUR MNT
70.3738.0001	1 EA	F1	FUSE, 1A FAST ACT SMT REPLACABLE
74.1042.0002	3 EA	S2,S4,S5	SWITCH, ROTARY DIP BCD RT ANGLE
74.1042.4061	3 EA	W/S2,S4,S5	KNOB, SNAP-IN FO 74.1042.0002
74.1045.0001	1 EA	S3	SWITCH, PUSH BUTTON SURFACE MOUNT
74.1054.0001	1 EA	S1	SWITCH, TOGGLE SPDT VERTICAL
74.1055.0001	1 EA	S6	SWITCH, DIP 4 POSITION VERTICAL
82.4321.0001	1 EA	D3	DIODE, RECTIFIER MRA4003T3 200V 3A SMT
82.4322.0001	1 EA	D4	DIODE, TVS ZENER 1.5SMC27AT3 27V 40A SMT

Control PCB Assembly (Continued)

PART NO.	QTY	REF. DES.	DESCRIPTION
82.5329.0001	3 EA	D1,D2,D6	DIODE, MBRS340T3 40V 3A SCHOTTKY SUR MT
82.5330.0001	1 EA	D5	DIODE, MURS320T3 200V 3A RECTIFIER SUR MT
82.5331.0001	8 EA	Z1-Z8	DIODE, P6KE13CA TVS ZENER 13V
83.3172.0001	1 EA	U3	IC, LM78L15 REGULATOR 15V SUR MT
83.3173.0001	1 EA	VR1	IC, LM2594 ADJUSTABLE 0.5A REGULATOR
83.3174.0001	1 EA	VR2	IC, 2596S VOLTAGE REG 5V TO-263 SUR MT
84.4234.0002	4 EA	U14,U15,U16,U18	IC, RS485 TRANSCEIVER SUR MT SOIC PKG
84.4247.0002	2 EA	U9,U12	IC, HM628128BLFP-7 SRAM 128K X 8 32 PIN SOP 70NS
84.4248.0001	1 EA	U6	IC, MC68302FC16C MICROPROCESSOR 132 PIN
84.4253.0001	1 EA	U2	IC, AD587 10V PRECISION REFERENCE
84.4254.0001	1 EA	U8	IC, 74FCT2244 BUFFER OCTAL SOIC
84.4255.0001	1 EA	U1	IC, AD7224LP D/A CONV SUR MNT
84.4256.0001	1 EA	U10	IC, 74ACT04 HEX INVERTER 14 PIN SOIC SUR MT
84.4257.0001	1 EA	U11	IC, 74ACT32 QUAD OR 14PIN SOIC SUR MNT
84.7411.0008	1 EA	U19	IC, HPR100W DC TO DC CONVERTER SUR MNT
86.6104.0001	2 EA	U13,U17	IC, HCPL-0600 OPTO ISOLATOR SMT SO-8
87.9654.0001	1 EA	U7	EPROM, PRGM 27C040 VL PP HI V4.1
87.9654.0002	1 EA	U4	EPROM, PGMD 27C040 VL PP LO V4.1
88.8122.0002	1 EA	D7	LED, GRN, DIFFUSED, 5300H5
88.8122.0003	1 EA	D8	LED, YEL, DIFFUSED, 5300H7



COMPONENT SIDE



SOLDER SIDE

4.2.11

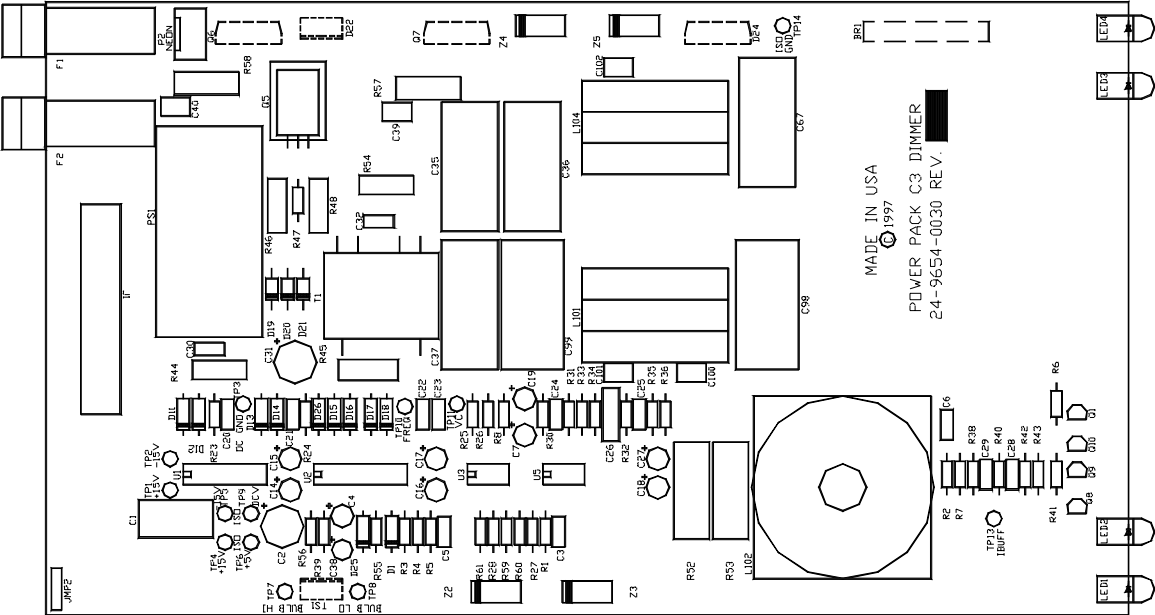
C3 Dimmer PCB Assembly

24.9654.0030

PART NO.	QTY	REF. DES.	DESCRIPTION
11.9654.0030	1 EA		PCB, POWER PACK C3 DIMMER
28.9654.0030	1 EA		COMPONENT KIT, POWER PACK C3 DIMMER
51.5021.0001	1 EA	Q5	HEATSINK, 577002B, TO-220, 1/4"FIN, NO TABS
52.6487.0024	1 EA	J1	HEADER, 24 POS DUAL ROW 44472
53.2200.0004	1 EA	Q5	NUT, 4-40 KEPS SS
53.6567.0001	1 EA	LOCATION ??	SCREW, 4-40 X 1/2" PPZ
55.6659.0003	1 EA	Q5	STANDOFF, 3/16" HEX 4-40 x 3/16"
68.4533.0001	1 EA	T1	XFMR, DRIVER, 1.5mH, APS6, 1/2" BOBBIN HT
68.4536.0001	2 EA	L101,104	INDUCTOR, 0.58mH,13A COMMON MODEL LINE CHOKE
68.4543.0330	1 EA	L102	INDUCTOR, 300 uH TOROIDAL
70.3723.0012	2 EA	F1,2	FUSE, 12.5A 250VAC 5 X 20 MM
70.3739.0001	2 EA	F1,2	FUSE HOLDER, PCB MT 16A 250VAC
84.7413.0001	1 EA	PS1	IC, BWR-15/330-D48 DC CONV. 18-72V INPUT, %%P15V OUTPUT
50.2800.0008	2 EA	U3,5	SOCKET, 8PIN .3"DIP SCREW MACHINE IC
50.2800.0018	1 EA	U2	SOCKET, 18PIN .3" DIP SCREW MACHINE IC
52.3159.0001	1 EA	U1	SOCKET, IC, 16 PIN, FOR ISO 122 AMPLIFIER
52.6259.0003	1 EA	P2	HEADER, MTA156, STRT, FRCT LOK, 3 POS
52.6286.0004	1 EA	JMP2	HEADER, MALE STRGHT ROW 4 PINS
52.6399.0001	1 EA	JMP2	JUMPER, PROGRAMMING
52.8283.0001	13 EA	TP1-13	TERM, SWAGE MT. TURRET
52.8283.0004	1 EA	TP14	TERM, SWAGE MT. TURRET
60.1230.2003	2 EA	R33,34	RES, 1/4W 1% 200K MF
60.1230.8253	1 EA	R31	RES, 1/4W 1% 8.25K
60.1420.1503	1 EA	R3	RES, 1/4W 5% 1.5K CF
60.1420.2206	1 EA	R56	RES, 1/4W 5% 2.2MEG
60.1421.2202	3 EA	R4,7,28	RES, 1/4W 5% 220 OHM CF
60.1421.4702	4 EA	R8,30,36,38	RES, 1/4W 5% 47K CF
60.1422.1001	3 EA	R2,43,47	RES, 1/4W 5% 1K CF
60.1422.3301	3 EA	R6,41,42	RES, 1/4W 5% 3.3K CF
60.1424.1005	4 EA	R5,23,32,55	RES, 1/4W 5% 10K CF
60.1424.1502	1 EA	R40	RES, 1/4W 5% 15K CF
60.1426.4703	2 EA	R26,35	RES, 1/4W 5% 470K CF
60.1930.1004	1 EA	R27	RES, 1/4W .1% 10K MF
60.1930.1005	1 EA	R24	RES, 1/4W 1% 100K MF
60.1930.1625	1 EA	R39	RES, 1/4W 1% 162K MF
60.1930.2613	2 EA	R25,59	RES, 1/4W 1% 2.61K MF
60.1930.6492	1 EA	R60	RES, 1/4W 1% 649 OHM MF
60.3430.1003	2 EA	R44,54	RES, 1W 5% 1K MET OXIDE
60.3430.1004	2 EA	R46,48	RES, 1W 5% 10 OHM MET OXIDE
60.3530.1002	1 EA	R45	RES, 1W 5% 100 OHM MF FLAME PROOF
60.4450.4700	2 EA	R57,58	RES, 2W 5% 4.7 OHM MET OXIDE
60.7242.0501	2 EA	R52,53	RES, 5W 1% .05 WW
62.2023.0220	2 EA	C2,31	CAP, 220 CAPUF, 35V,RAD, ALUM TANTALUM 10%

C3 Dimmer PCB Assembly (Continued)

PART NO.	QTY	REF. DES.	DESCRIPTION
62.2027.0225	1 EA	C38	CAP, 2.2UF 35V RAD TANTATLUM 10%
62.2027.0475	9 EA	C4,7,14-19,27	CAP, 4.7UF, 35V,RAD,TANTALUM, .125", 10%
62.2045.0104	7 EA	C5,6,20,25,28-30	CAP, .1UF, 63V, RAD, POLYEST
62.2046.0001	1 EA	C26	CAP, .001UF, 1000V, RAD, POLYEST, .400", 5%
62.2047.0471	2 EA	C39,40	CAP 470PF, 1000V, RAD CERAMIC 10%
62.2094.0102	4 EA	C3,23,24,32	CAP, .001UF, 100V, RAD, POLY, .2", 10%
62.2094.0103	1 EA	C21	CAP, .01UF, 100V, RAD, POLYEST, .200", 5%
62.3000.0033	1 EA	C1	CAP, .033UF, 1000V, RAD, POLYPRO, .600", 10%
62.3005.0105	4 EA	C35-37,67	CAP, 1UF, 400V, AXL, POLYPROPYLENE
62.3007.0105	2 EA	C98,99	CAP, 1.0UF, 275VAC, X2 RFI SUPPRESSOR, 10%
62.3008.0047	1 EA	C22	CAP, .0047UF, 100V, RAD,POLY, S=.2", 5%
62.3017.0102	3 EA	C100-102	CAP, 1000PF 250V RAD CER DISC 20% Y-TYPE
80.1513.0117	1 EA	Q5	TRANSISTOR, TIP117 PNP 100V 2A TO220
80.2513.0005	4 EA	Q1,8-10	TRANSISTOR, MPSA05 NPN 60V 500mA TO92
82.4307.4002	4 EA	D11,12,25,26	DIODE, RECTIFIER, 1N4002 100V
82.4312.0120	3 EA	D19-21	DIODE, MUR120 FAST
82.4317.5819	7 EA	D1,13-18	DIODE, RECTIFIER, 1N5819 40V 1A
82.5301.6303	4 EA	Z2-5	DIODE, ZENER TS, 1.5 KE200 200V 5W
83.3117.0001	1 EA	U5	IC, LM393 DUAL COMPARATOR
83.3149.0002	1 EA	U2	IC, SG3526N PULSE WIDTH MODULATOR
83.3151.0620	1 EA	U3	IC, AD620AN, INSTRUMENT AMP
83.3159.0001	1 EA	U1	IC, ISO122, ISOLATION AMP
88.8122.0001	1 EA	LED1	LED, RED, DIFFUSED, 5300HI
88.8122.0002	1 EA	LED3	LED, GRN, DIFFUSED, 5300H5
88.8122.0003	2 EA	LED2,LED4	LED, YEL, DIFFUSED, 5300H7



4.2.12

APS6 PCB Assembly

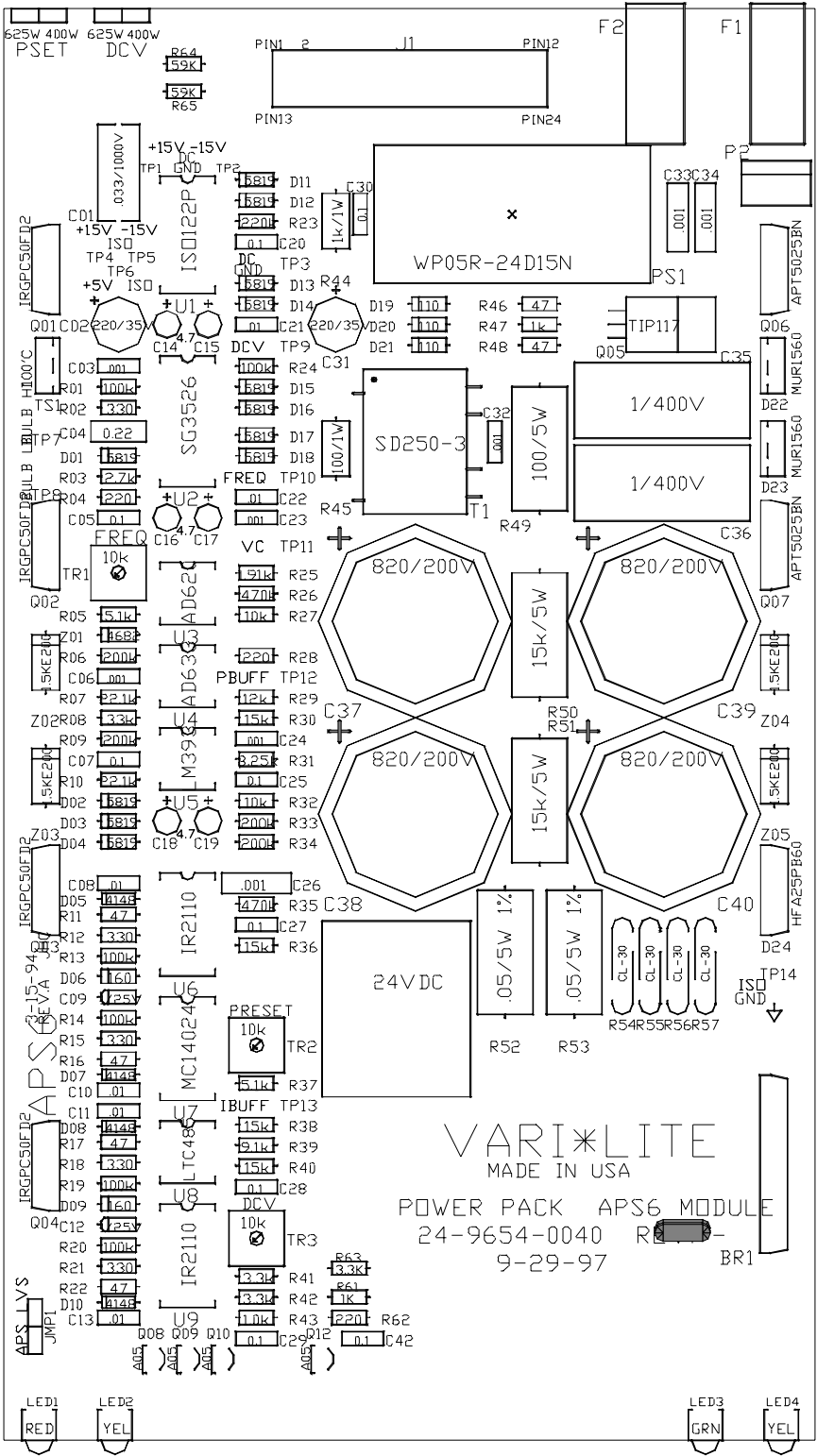
24.9654.0040

PART NO.	QTY	REF. DES.	DESCRIPTION
11.9654.0040	1 EA		PCB, POWER PACK APS6
50.2800.0008	4 EA	U3-5,8	SOCKET, 8PIN .3"DIP SCREW MACHINE IC
50.2800.0014	3 EA	U6,7,9	SOCKET, 14PIN .3" DIP SCREW MACHINE IC
50.2800.0018	1 EA	U2	SOCKET, 18PIN .3" DIP SCREW MACHINE IC
51.5021.0001	1 EA	Q5	HEATSINK, 577002B, TO-220, 1/4"FIN, NO TABS
52.3159.0001	1 EA	U1	SOCKET, IC, 16 PIN, FOR ISO 122 AMPLIFIER
52.6259.0003	1 EA	P2	HEADER, MTA156, STRT, FRCT LOK, 3 POS
52.6286.0004	3 EA	JMP1,PSET,DCV	HEADER, MALE STRGHT ROW 4 PINS
52.6399.0001	2 EA	JMP1,DCV	JUMPER, PROGRAMMING
52.6487.0024	1 EA	J1	HEADER, 24 POS DUAL ROW 44472
52.8283.0001	13 EA	TP1-13	TERM, SWAGE MT. TURRET
52.8283.0004	1 EA	TP14	TERM, SWAGE MT. TURRET
53.2200.0004	1 EA	Q5	NUT, 4-40 KEPS SS
53.6567.0001	1 EA	Q5	SCREW, 4-40 X 1/2" PPZ
55.6659.0003	1 EA	Q5	STANDOFF, 3/16" HEX 4-40 x 3/16"
60.1230.1913	1 EA	R25	RES, 1/4W 1% 1.91K
60.1230.2003	4 EA	R6,9,33,34	RES, 1/4W 1% 200K MF
60.1230.2214	2 EA	R7,10	RES, 1/4W 1% 22.1K
60.1230.5904	2 EA	R64,65	RES, 1/4W 1% 59K MF
60.1230.8253	1 EA	R31	RES, 1/4W 1% 8.25K
60.1420.2703	1 EA	R3	RES, 1/4W 5% 2.7K
60.1420.3302	1 EA	R8	RES, 1/4W 5% 33K CF
60.1420.8203	1 EA	R29	RES, 1/4W 5% 8.2K CF
60.1421.2202	3 EA	R4,28,62	RES, 1/4W 5% 220 OHM CF
60.1422.1001	3 EA	R43,47,61	RES, 1/4W 5% 1K CF
60.1422.3301	3 EA	R41,42,63	RES, 1/4W 5% 3.3K CF
60.1422.9102	1 EA	R39	RES, 1/4W 5% 9.1K CF
60.1423.4702	6 EA	R11,16,17, 22,46,48	RES, 1/4W 5% 47 CF
60.1423.5103	2 EA	R5,37	RES, 1/4W 5% 5.1K CF
60.1424.1005	3 EA	R23,27,32	RES, 1/4W 5% 10K CF
60.1424.1502	4 EA	R30,36,38,40	RES, 1/4W 5% 15K CF
60.1426.1003	6 EA	R1,13,14,19,20,24	RES, 1/4W 5% 100K CF
60.1426.4703	2 EA	R26,35	RES, 1/4W 5% 470K CF
60.1429.3303	5 EA	R2,12,15,18,21	RES, 1/4W 5% 330 CF
60.1429.3305	1 EA	R27A	RES, 1/4W 5% 330K CF
60.3430.1003	1 EA	R44	RES, 1W 5% 1K MET OXIDE
60.3530.1002	1 EA	R45	RES, 1W 5% 100 OHM MF FLAME PROOF
60.7242.0501	2 EA	R52,53	RES, 5W 1% .05 WW
60.7440.1002	1 EA	R49	RES, 5W 5% .05 100 OHM WW
60.7442.1504	2 EA	R50,51	RES, 5W 5% 15K CF
62.2023.0220	2 EA	C2,31	CAP, 220 CAPUF, 35V,RAD, ALUM TANTALUM 10%
62.2027.0475	6 EA	C14-19	CAP, 4.7UF 35V RAD TANTATLUM 10%
62.2043.0105	2 EA	C9,12	CAP, 1UF, 25V, AXL, TANTALM
62.2045.0104	10 EA	C5,7,20,25,27- 30,42	CAP, .1UF, 63V, RAD, POLYEST

APS6 PCB Assembly (Continued)

PART NO.	QTY	REF. DES.	DESCRIPTION
62.2046.0001	3 EA	C26,33,34	CAP, .001UF, 1000V, RAD, POLYEST, .400", 5%
62.2059.0473	1 EA	C4	CAP .47UF, 63V, RAD POLYEST .300 10% METALLIZED
62.2081.0821	4 EA	C37-40	CAP, 820UF, 200V, RAD, ALUM
62.2094.0102	5 EA	C3,6,23,24,32	CAP, .001UF, 100V, RAD, POLY, .2", 10%
62.2094.0103	6 EA	C8,10,11,13,21,22	CAP, .01UF, 100V, RAD, POLYEST, .200", 5%
62.3000.0033	1 EA	C1	CAP, .033UF, 1000V, RAD, POLYPRO, .600", 10%
62.3005.0105	2 EA	C35,C36	CAP, 1UF, 400V, AXL, POLYPROPYLENE
63.2012.0001	3 EA	TR1,TR2,TR3	POT, 10K, LIN, 1TRN, HORZ MNT, 10%
63.2026.0001	4 EA	R54-R57	THERMISTOR, CARBON 8A, 2.5 OHM
66.4511.0001	1 EA	K1	RELAY, 30A, 24VDC, 277VAC
68.4533.0001	1 EA	T1	XFMR, DRIVER, 1.5mH, APS6, 1/2" BOBBIN HT
70.3723.0012	2 EA	F1, F2	FUSE, 12.5A 250VAC 5X20MM FAST BLO
70.3739.0001	2 EA	F1, F2	FUSE HOLDER, PCB MT 16A 250VAC
80.1513.0117	1 EA	Q5	TRANSISTOR, TIP117 PNP 100V 2A TO220
80.2513.0005	4 EA	Q8-10,12	TRANSISTOR, MPSA05 NPN 60V 500mA TO92
82.4307.4002	2 EA	D11,12	DIODE, RECTIFIER, 1N4002 100V
82.4308.4682	1 EA	Z1	DIODE, ZENER, 1/4W 2.7V 5% 1N4682
82.4312.0105	3 EA	D19-21	DIODE, FAST, MUR105/110 50V
82.4317.5819	10 EA	D1-4,13-18	DIODE, RECTIFIER, 1N5819 40V 1A
82.5301.6303	4 EA	Z2-5	DIODE, ZENER TS, 1.5 KE200 200V 5W
82.5302.4148	4 EA	D5,7,8,10	DIODE, ULTRA FAST, 1N4148 100V 10mA
82.5318.0160	2 EA	D6,9	DIODE, MUR160 1A
83.3109.0001	1 EA	U7	IC, 14024 SEVEN STAGE RIPPLE COUNTER
83.3117.0001	1 EA	U5	IC, LM393 DUAL COMPARATOR
83.3149.0002	1 EA	U2	IC, SG3526N PULSE WIDTH MODULATOR
83.3151.0620	1 EA	U3	IC, AD620AN, INSTRUMENT AMP
83.3153.0633	1 EA	U4	IC, AD633JN, MULTIPLIER, 8 PIN DIP
83.3159.0001	1 EA	U1	IC, ISO122, ISOLATION AMP
84.4234.0001	1 EA	U8	IC, LTC485CN8 RS422/RS485 TRANSVR DIP PKG
84.7413.0001	1 EA	PS1	IC, BWR-15/330-D48 DC CONV. 18-72V INPUT, %%P15V OUTPUT
85.5120.0001	2 EA	U6,U9	IC, IR2110, 1/2 BRIDGE DRIVER
88.8122.0001	1 EA	LED1	LED, RED, DIFFUSED, 5300HI
88.8122.0002	1 EA	LED3	LED, GRN, DIFFUSED, 5300H5
88.8122.0003	2 EA	LED2, LED4	LED, YEL, DIFFUSED, 5300H7

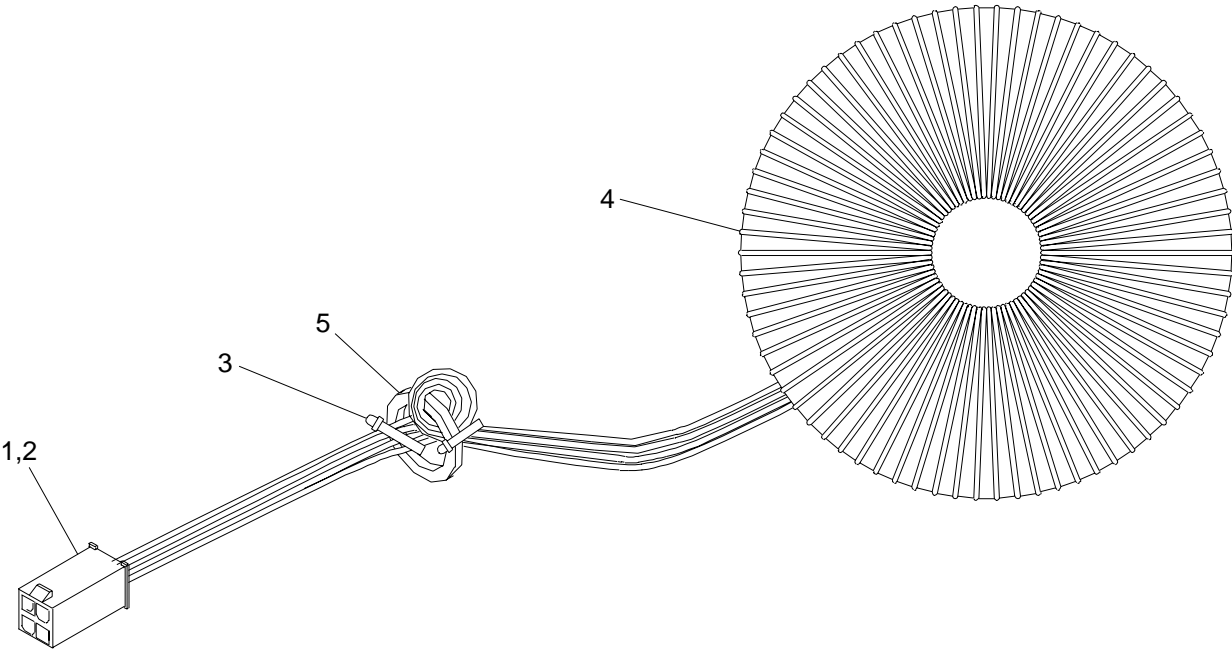
APS6 PCB Assembly (Continued)





4.2.13 Toroid Assembly, APS6/C3 Power Pack  
23.9654.0019

NO.	PART NO.	QTY	DESCRIPTION
1	52.6486.0004	1 EA	PLUG, 4 POS DUAL ROW FREE HANG
2	52.8334.0001	4 EA	CONTACT, MALE 18-20 AWG REEL HCS
3	55.2186.0001	2 EA	CABLE TIE, SMALL .10 X 4"
4	68.4516.0003	1 EA	CHOKE, TOROID 5mH 15A W/2X 10" LEADS
5	68.4561.0001	1 EA	CORE, TOROIDAL T94-26 .942 OD .56 ID

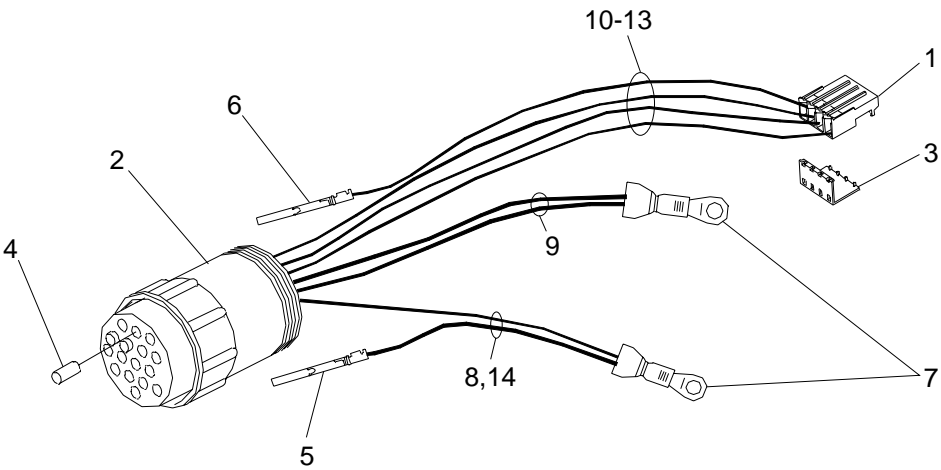


4.2.14

AC/Data Out Cable Assembly

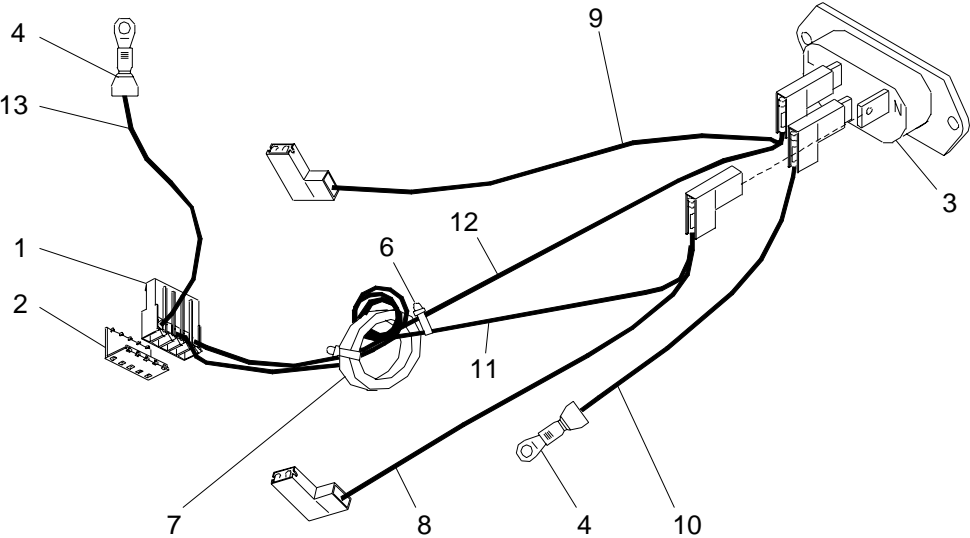
25.9654.0025

NO.	PART NO.	QTY	DESCRIPTION
1	52.6396.2204	1 EA	RECEPT, MTA100 W/TAB RED 4 POS
2	52.6400.0003	1 EA	PLUG, CPC 17-16 STD SEX
3	52.6424.0004	1 EA	COVER, STRAIN RELIEF 4/POS MTA
4	52.6427.0012	3 EA	PLUG, KEYING, CONNECTOR
5	52.8205.0002	3 EA	CONTACT SCKT, TIN, 18-16 AWG TYPE 3+
6	52.8210.0002	5 EA	CONTACT SCKT, GLD 22 AWG TYPE 3+
7	52.8231.0005	2 EA	TERM, RING #6 BLU 16-14 AWG
8	73.3018.0008	2.5 IN	WIRE, 18 AWG 300V 80C GRY UL1061
9	73.3516.0504	5 IN	WIRE, 16 AWG 300V 105C GRN/YEL TUV UL1569
10	73.3522.0001	6.5 IN	WIRE, 22 AWG 300V 105 PVC BRN UL1569
11	73.3522.0003	6.5 IN	WIRE 22 AWG 300V 105C PVC ORGL UL1569
12	73.3522.0004	6.5 IN	WIRE 22 AWG 300V 105C PVC YEL UL1569
13	73.3522.0006	6.5 IN	WIRE, 22 AWG 300V 105 PVC BLU UL1569
14	73.3522.0008	2.5 IN	WIRE, 22 AWG 300V 105 PVC GRY UL1569



4.2.15 AC In Cable Assembly  
25.9654.0026

NO.	PART NO.	QTY	DESCRIPTION
1	52.6434.1805	1 EA	CONN, IDC, MTA156, 5POS, 18AWG
2	52.6436.0005	1 EA	COVER, STRAIN RELIEF, 5POS, MTA156
3	52.6482.0001	1 EA	CONN, IEC AC INLET PANEL MOUNT
4	52.8223.0001	2 EA	TERM, RING #6 BLUE 16-14 AWG PIDG
5	52.8313.0001	5 EA	RCPT, FASTON 1/4" 18-14 AWG FLAG DBL CRP
6	55.2186.0001	2 EA	CABLE TIE, SMALL .1 X 4"
7	68.4561.0001	1 EA	CORE, TOROIDAL, T94-26 .942OD X .56ID
8	73.3516.0009	4.5 IN	WIRE, 16 AWG 300V 105C PVC WHT UL1569
9	73.3516.0010	3 IN	WIRE, 16 AWG 300V 105C PVC BLK UL1569
10	73.3516.0504	3 IN	WIRE, 16 AWG 300V 105C PVC GRN/YEL STRP UL1569
11	73.3518.0009	10 IN	WIRE, 18 AWG 300V 105C PVC WHT UL1569
12	73.3518.0010	10 IN	WIRE, 18 AWG 300V 105C PVC BLK UL1569
13	73.3518.0504	4.5 IN	WIRE, 18 AWG 300V 105C PVC GRN/YEL STRP UL1569



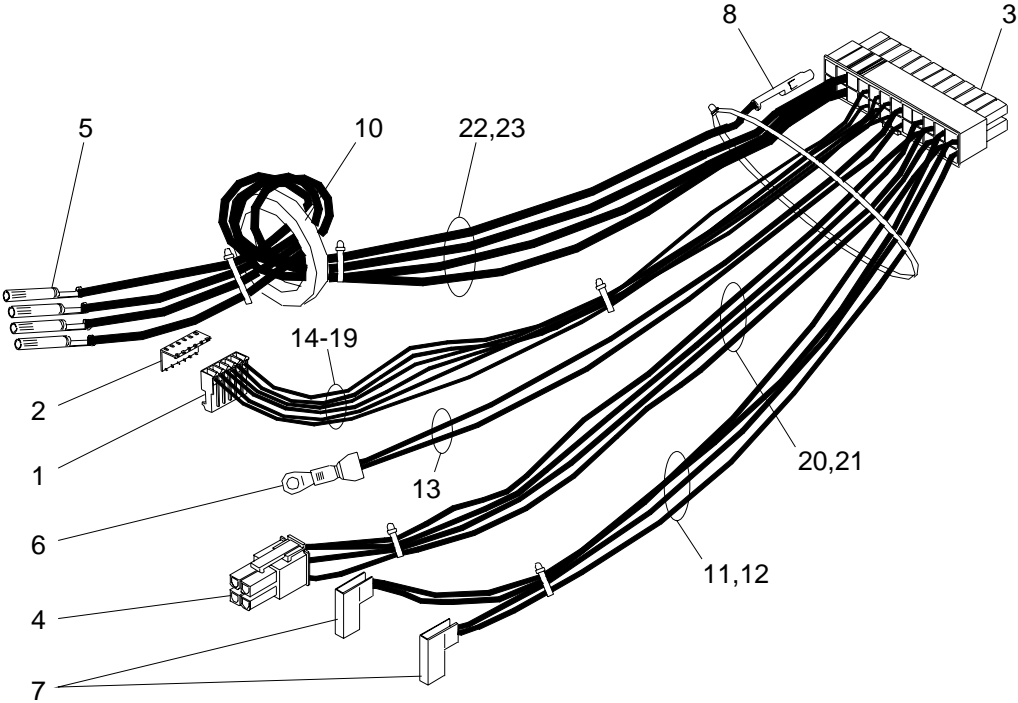
4.2.16

Lamp Power Supply Cable Assembly

25.9654.0028

NO.	PART NO.	QTY	DESCRIPTION
1	52.6396.2206	1 EA	RECEPT, MTA100 W/TAB RED 6 POS
2	52.6424.0006	1 EA	COVER, STRAIN RELIEF/6POS MTA100
3	52.6484.0004	1 EA	RECEPT, 24 POS DUAL ROW 5557
4	52.6484.0024	1 EA	RECEPT, 4 POS DUAL ROW MFJR
5	52.8205.0002	4 EA	CONTACT, SCKT, TIN, 18-16AWG TYPE 3+
6	52.8223.0001	1 EA	TERM, RING #6 BLUE 16-14 AWG
7	52.8313.0001	2 EA	RCPT, FASTON 1/4" 18-14 AWG FLAG DBL CRP
8	52.8333.0001	24 EA	CONTACT, FEMALE 18-20 AWG REEL HCS
9	55.2186.0001	6 EA	CABLE TIE, SMALL .10 X 4"
10	68.4561.0001	1 EA	CORE, TOROIDAL, T94-26 .942 OD .56 ID
11	73.3518.0009	18 IN	WIRE, 18AWG 300V 105C PVC WHT UL1569
12	73.3518.0010	16 IN	WIRE, 18AWG 300V 105C PVC BLK UL1569
13	73.3518.0504	15 IN	WIRE,18AWG 300V 105C PVC GRN/YL STRP UL1569
14	73.3522.0001	8 IN	WIRE, 22AWG 300V 105C PVC BRN UL1569
15	73.3522.0002	8 IN	WIRE, 22AWG 300V 105C PVC RED UL1569
16	73.3522.0003	8 IN	WIRE, 22AWG 300V 105C PVC ORG UL1569
17	73.3522.0006	8 IN	WIRE, 22AWG 300V 105C PVC BLU UL1569
18	73.3522.0009	8 IN	WIRE, 22AWG 300V 105C PVC WHT UL1569
19	73.3522.0010	8 IN	WIRE, 22AWG 300V 105C PVC BLK UL1569
20	73.6018.0003	24 IN	WIRE, 18AWG 600V 105C PVC ORG UL1015
21	73.6018.0004	24 IN	WIRE, 18AWG 600V 105C PVC YEL UL1015
22	73.6018.0006	20 IN	WIRE, 18AWG 600V 105C PVC BLU UL1015
23	73.6018.0007	20 IN	WIRE, 18AWG 600V 105C PVC VIO UL1015

Lamp Power Supply Cable Assembly (Continued)

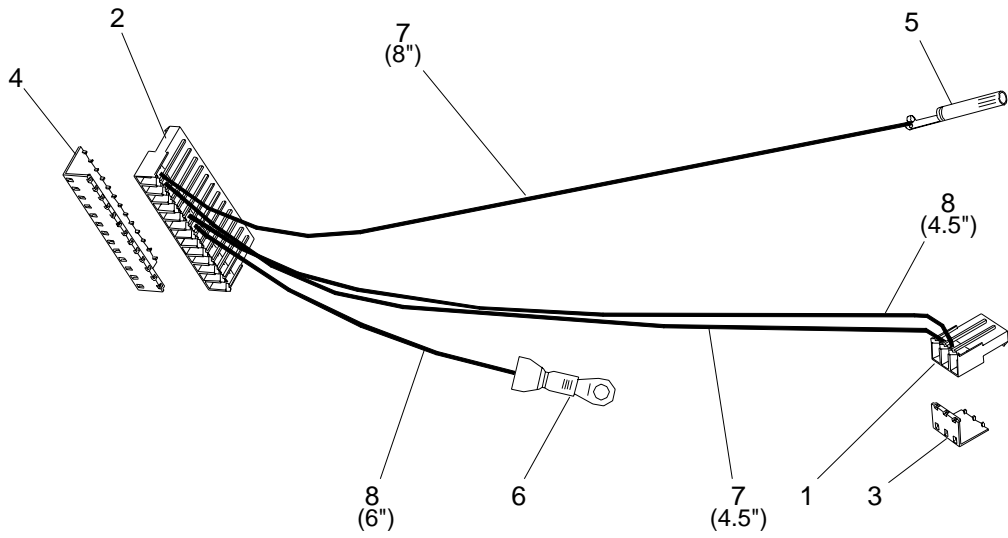


4.2.17

DC Out Low Voltage Supply Cable Assembly

25.9654.0027

NO.	PART NO.	QTY	DESCRIPTION
1	52.6434.1803	1 EA	CONN, CLOSED WO/TABS 18AWG 3 POS
2	52.6434.1813	1 EA	RECEPT, MTA156 ORG 13 POS W/O TABS
3	52.6436.0003	1 EA	COVER, STRAIN RELIEF 3/POS
4	52.6436.0013	1 EA	COVER, STRAIN RELIEF, MTA13 POS MTA156
5	52.8205.0002	1 EA	CONTACT SCKT, TIN, 18-16 AWG (TYPE 3+)
6	52.8231.0005	1 EA	TERM, RING #6 16-14 AWG
7	73.3518.0002	12.5 IN	WIRE, 18 AWG 300V 105C PVC RED UL1569
8	73.3518.0010	10.5 IN	WIRE, 18 AWG 300V 105C PVC BLK UL1569

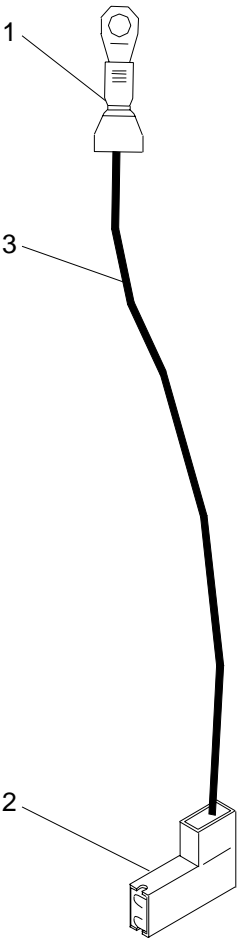


4.2.18

Line Filter Ground Cable Assembly

25.9654.0029

NO.	PART NO.	QTY	DESCRIPTION
1	52.8223.0001	1 EA	TERM, RING #6 BLUE 16-14 AWG PIDG
2	52.8313.0001	1 EA	RCPT, FASTON 1/4" 18-14 AWG FLAG DBL CRP
3	73.7008.0504	4 IN	WIRE, 16AWG 300V 80C GRN/YEL TUV UL1061

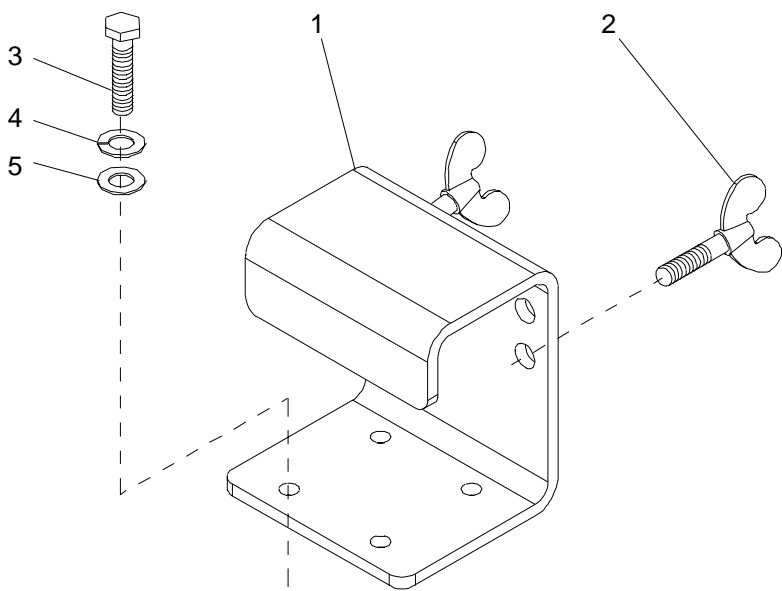


4.2.19

Hook Assy. W/Wing Bolts & HRDW

22.9654.0045

NO.	PART NO.	QTY	DESCRIPTION
1	10.9654.0039	1 EA	TRUSS HOOK, POWER PACK
2	53.6505.0002	2 EA	BOLT, 3/8-16 X 1-1/2 BLK WING
3	53.6505.0018	4 EA	BOLT, 1/4-28 X 3/4" HX HD GRD 5 ZINC PLT FULL THRD
4	55.6549.0001	4 EA	WASHER, SPLIT LOCK 1/4"
5	55.6631.0001	4 EA	WASHER, FLAT 1/4" ID

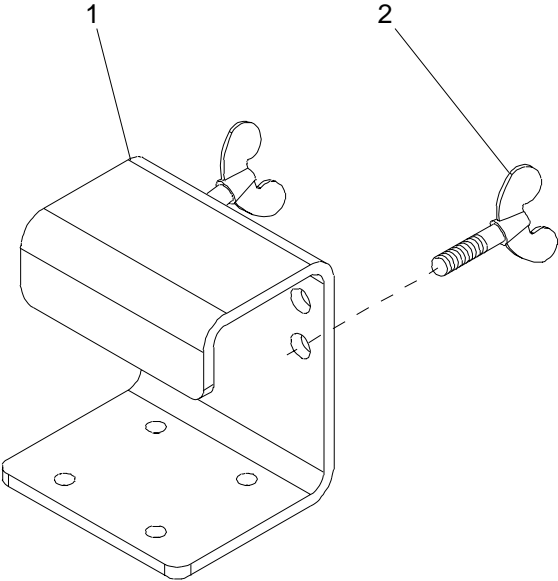




4.2.20 Hook Assy. W/Wing Bolts  
22.9654.0044

NO.	PART NO.	QTY	DESCRIPTION
1	10.9654.0039	1 EA	TRUSS HOOK, POWER PACK
2	53.6505.0002	2 EA	BOLT, 3/8-16 X 1-1/2 BLK WING

**Note:** This is a stand-alone assembly designed for hook and wing nut replacement only. See assembly 22.9654.0045 for a complete listing of parts.



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## Chapter 5. Diagrams

This chapter contains electrical diagrams and connector pin codes for the DMX power pack. Sections are as follows:

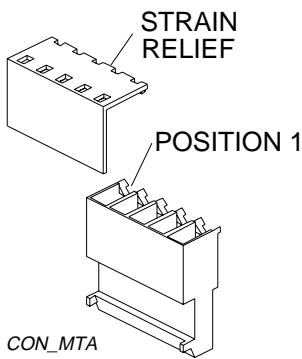
- 5.1 Connector Type Identification
- 5.2 Connector Pin Locations
- 5.3 Wire Diagram

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## 5.1 Connector Type Identification

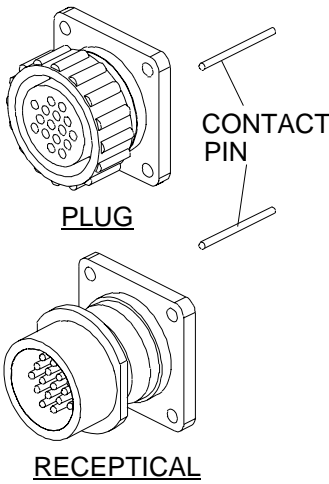
The DMX power pack contains the following connector types:

### 5.1.1 MTA-100 and MTA-156



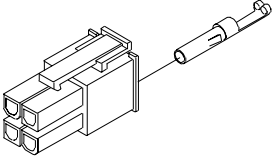
MTA-100 and MTA-156 connectors are used to connect wires to PC boards. MTA-100 connectors are smaller in size and used smaller diameter wire than MTA-156 connectors. The connectors range from two through 10 positions and come in red, yellow and black colors. A strain relief is usually used in conjunction with the connector to protect the wire connection. This particular illustrations shows a typical five position MTA style connector and strain relief.

### 5.1.2 CPC



CPC connectors are used to connect controller wiring to external cables. The DPP front panel uses two 16 and two nine position CPC connectors. Contact pins are installed on the wires and the wires and contact pins are inserted into the CPC connector. Refer to the Connector Pin Locations section in this chapter for position identification.

### 5.1.3 Molex Mini-Fit, Jr.™ 5557



Molex Mini-Fit, Jr. Series connectors are used to connect internal wire harnesses. Connector pins are installed on the wires and the wires and connector pins are inserted into the Molex plugs or receptacles. Plugs and receptacles may be free (as shown) or PC board mounted.

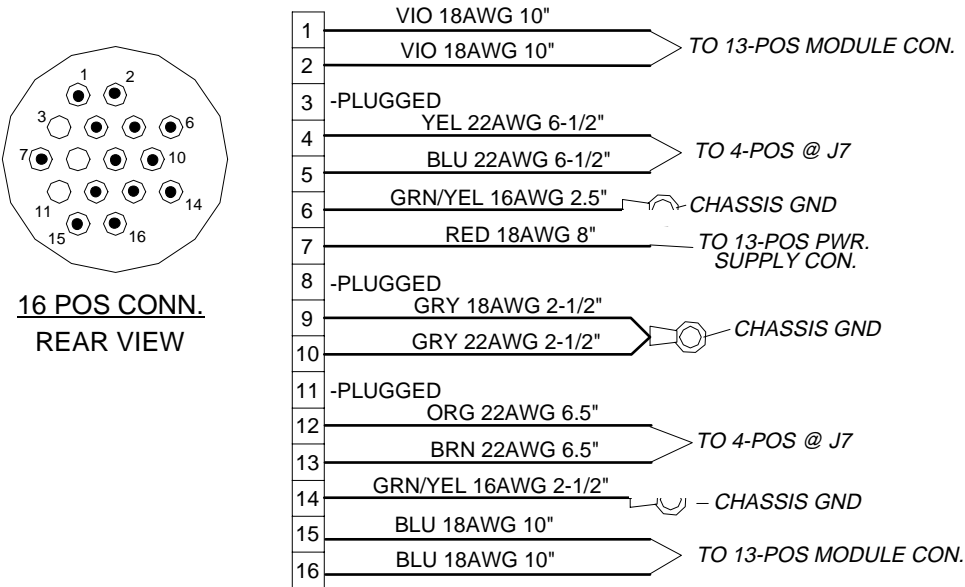
## 5.2 Connector Pin Locations

### 5.2.1 16 Position AC/Data Out Connector (25.9654.0025)

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	VIOLET	18 AWG	DIM LINE 1
2	VIOLET	18 AWG	DIM LINE 2
3	N/C	-	-
4	YELLOW	22 AWG	TX+
5	BLUE	22 AWG	TX-
6	GREEN/YELLOW	16 AWG	GROUND 1
7	RED	18 AWG	+24VDC
8	N/C	-	-
9	GREY	18 AWG	DIM DRAIN
10	GREY	22 AWG	DATA DRAIN
11	N/C	-	-
12	ORANGE	22AWG	RX+
13	BROWN	22AWG	RX-
14	GREEN/YELLOW	16 AWG	GROUND 2
15	BLUE	18 AWG	DIM NEUT 1
16	BLUE	18 AWG	DIM NEUT 2

#### DETAIL SCHEMATIC

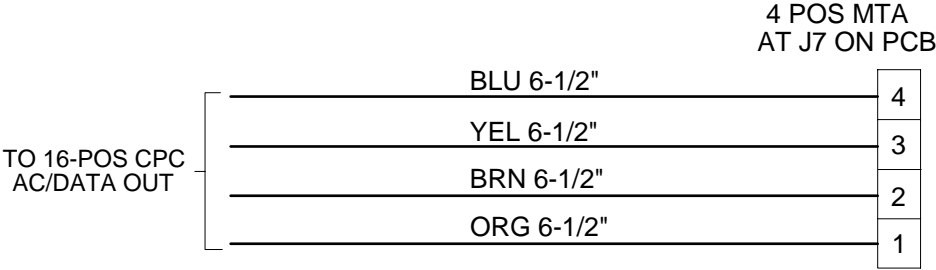
##### PIN CODE



5.2.2     4 Position MTA Data Out  
(part of 25.9654.0025)

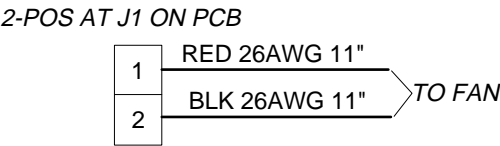
PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	ORANGE	22 AWG	RX+
2	BROWN	22 AWG	RX-
3	YELLOW	22 AWG	TX+
4	BLUE	22 AWG	TX-

DETAIL SCHEMATIC



5.2.3     2 Position Fan MTA Connector

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	RED	24 AWG	+24 VDC
2	BLACK	24 AWG	DC GROUND





**5.2.4    Power Supply DC Out MTA Connectors  
(25.9654.0027)**

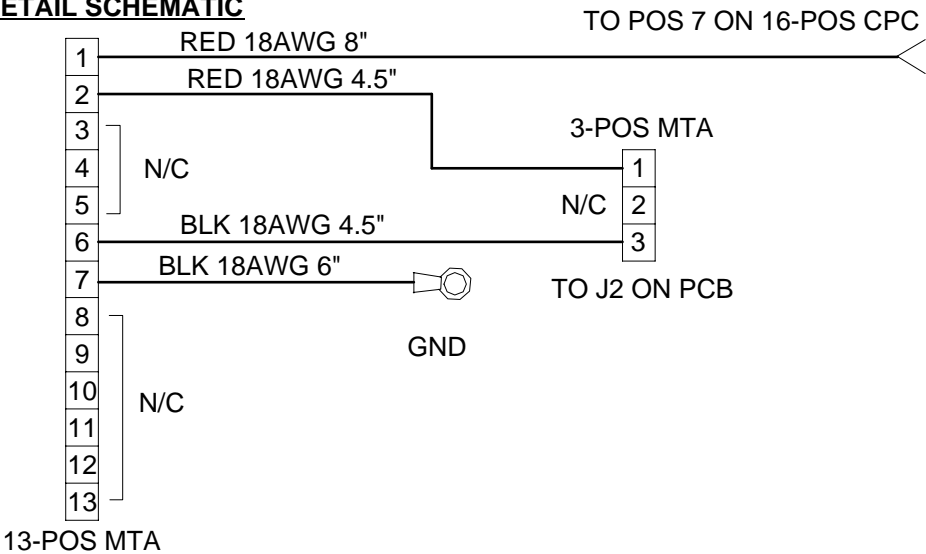
13 Position MTA

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	RED	18 AWG	+24V
2	RED	18 AWG	+24V
3	N/C	-	-
4	N/C	-	-
5	N/C	-	-
6	BLACK	18 AWG	DC GROUND
7	BLACK	18 AWG	DC GROUND
8	N/C	-	-
9	N/C	-	-
10	N/C	-	-
11	N/C	-	-
12	N/C	-	-
13	N/C	-	-

3 Position MTA

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	RED	18 AWG	+24V
2	N/C	-	-
3	BLACK	18 AWG	DC GROUND

**DETAIL SCHEMATIC**



5.2.5 Lamp Power Supply, 24, 4, and 6 Position Connectors  
(25.9654.0028)

6 Position MTA

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	ORANGE	22 AWG	DC CONT.
2	RED	22 AWG	+15V DC
3	BLACK	22 AWG	DC GND
4	WHITE	22 AWG	-15V DC
5	BROWN	22 AWG	110 MODE
6	BLUE	22 AWG	C3(1), APS(0)

24 Position Molex

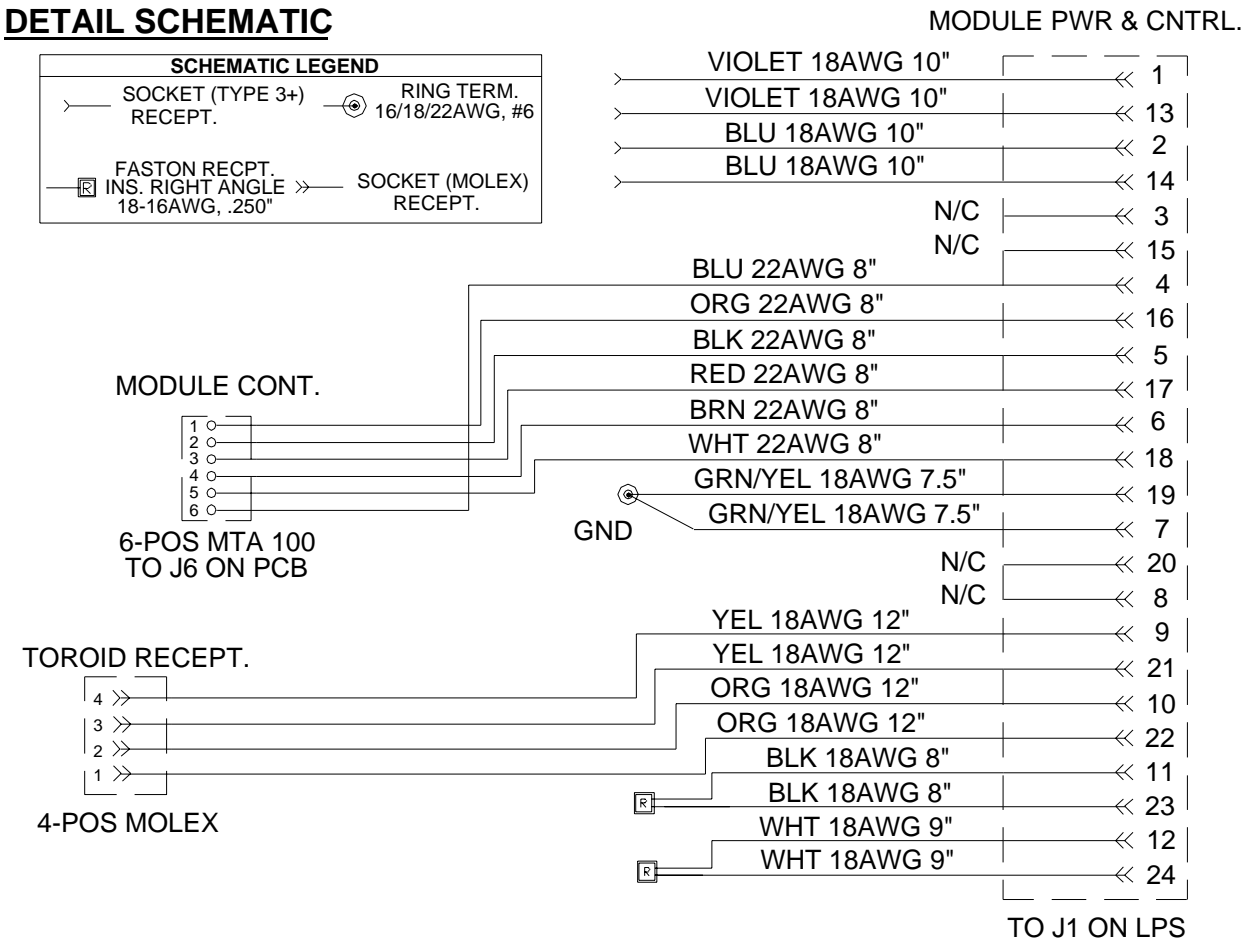
PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	VIOLET	18 AWG	BULB HI
13	VIOLET	18 AWG	BULB HI
2	BLUE	18 AWG	BULB LO
14	BLUE	18 AWG	BULB LO
3	N/C	-	-
15	N/C	-	-
4	BLUE	22 AWG	C3(1), APS(0)
16	ORANGE	22 AWG	DC CONT.
5	BLACK	22 AWG	DC GND
17	RED	22 AWG	+15V DC
6	BROWN	22 AWG	110 MODE
18	WHITE	22 AWG	-15V DC
19	GRN/YEL	18 AWG	CGND
7	GRN/YEL	18 AWG	CGND
20	N/C	-	-
8	N/C	-	-
9	YELLOW	18 AWG	VC
21	YELLOW	18 AWG	VC
10	ORANGE	18 AWG	VL
22	ORANGE	18 AWG	VL
11	BLACK	18 AWG	AC HI
23	BLACK	18 AWG	AC HI
12	WHITE	18 AWG	AC LO
24	WHITE	18 AWG	AC LO

Lamp Power Supply, 24, 4, and 6 Position Connectors  
(Continued)

4 Position Molex

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	ORANGE	18 AWG	VL
2	ORANGE	18 AWG	VL
3	YELLOW	18 AWG	VC
4	YELLOW	18 AWG	VC

DETAIL SCHEMATIC



5.2.6

AC In MTA and IEC Connectors

(25.9654.0026)

3 Position IEC

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
L	BLACK (2 EA)	16, 18 AWG	AC HI
G	GREEN/YELLOW	16 AWG	AC GROUND
N	WHITE (2 EA)	16, 18 AWG	AC LOW

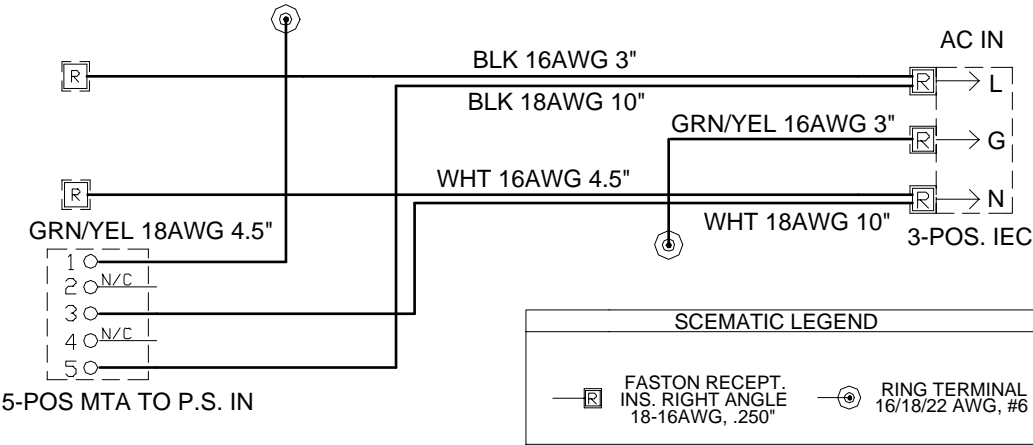
5 Position MTA

PIN	WIRE COLOR	WIRE SIZE	DESCRIPTION
1	GREEN/YELLOW	18 AWG	AC GROUND
2	N/C	-	-
3	WHITE	18 AWG	AC LOW
4	N/C	-	-
5	BLACK	18 AWG	AC HI

Note:

Refer to Chapter 2 for power cable configurations.

DETAIL SCHEMATIC



## 5.3 Wire Diagram

